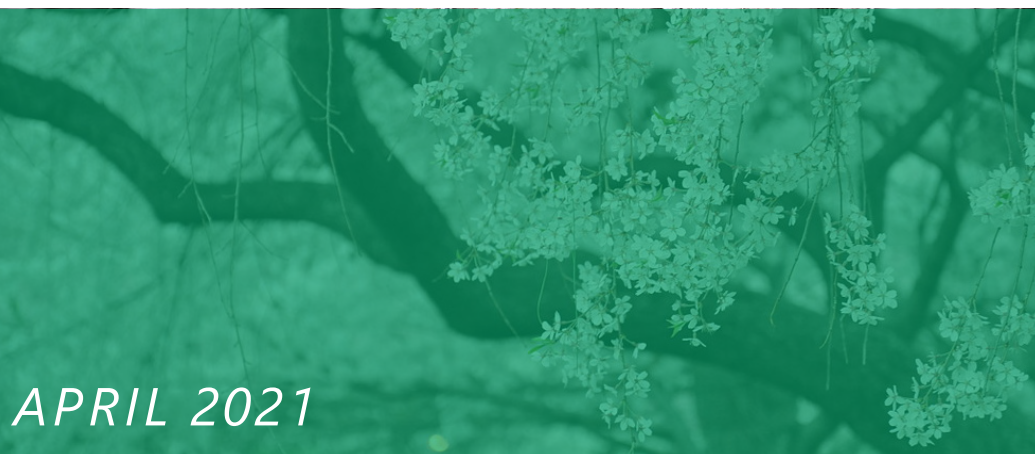
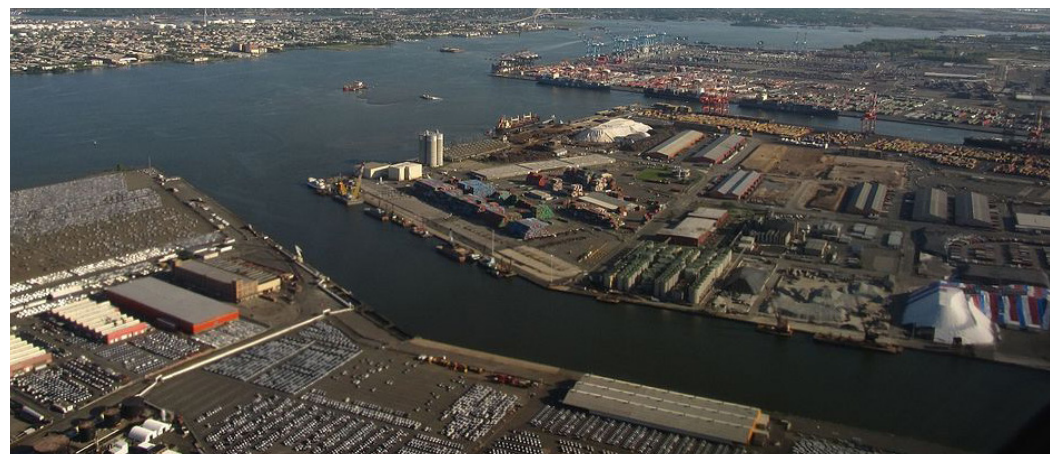




CITY OF NEWARK
**ENVIRONMENTAL
RESOURCE INVENTORY**



APRIL 2021



**NEWARK
FORWARD**



CITY OF **NEWARK**
Mayor Ras J. Baraka
OFFICE OF SUSTAINABILITY



City of Newark
Economic & Housing Development
— PLANNING & ZONING —

"The New Jersey Environmental Justice Alliance sends our wholehearted congratulations to the City of Newark and the Newark Environmental Commission on the Environmental Resources Inventory. We look forward to the progress that will be made toward full implementation of Newark's landmark Environmental Justice-Cumulative Impacts Ordinance as a result of the completion of this important project."

-Melissa Miles, Executive Director of NJ Environmental Justice Alliance

List of Edits Since Adoption on April 7, 2021

ID	Date	Description	Sections Affected
1	4/30/2021	Increased Radius of Map 1 to 250mi, minor edits to Map 1 text and Letter from the Environmental Commission	Map 1, Letter from the Environmental Commission

UPDATED APRIL 30, 2021

ENVIRONMENTAL RESOURCES INVENTORY (ERI)

City of Newark, Essex County, New Jersey
Final Report | April 2021

PROJECT TEAM

Nathaly Agosto Filión, Chief Sustainability Officer, Office of Sustainability
Nathan Erwin, GIS Planner, Office of Planning and Zoning
Rachel Bowers, GIS Analyst Graduate Intern
Irena Gorski Steiner, GIS Analyst Graduate Intern

LETTER FROM THE MAYOR



Dear Newark Residents,

Since taking the oath of office to lead our great city, I promised you I would put Newark residents first as we work together to build a Newark we can all believe in. I listened to the concerns of our community, and my administration worked closely with the [Newark Environmental Commission](#) as well as national environmental justice experts from across New Jersey at the beginning of my first term to adopt Newark's

Environmental Justice and Cumulative Impacts Ordinance.

As a statewide and regional hub of industry, commerce, innovation and energy, the impact of the legacy of environmental contamination is real and present in our community. Our historic legislation is another example of how Newark is a model city, showing the rest of the Country how to ensure that communities are safeguarded and protected by utilizing both grassroots activism and elected leadership together to change the status quo. Newark's local leadership worked with our partners at the state to pass their own [Environmental Justice Law](#), N.J.S.A. 13:1D-157. This historic statewide law is a landmark legislative achievement for New Jersey extending to 331 municipalities.

Newark is proud to have been the first in the Country to adopt such an ordinance. The Environmental Resources Inventory is another example of Newark paving the way. In the following pages, you will find detailed information, surpassing the traditional natural resources inventory—concentrated primarily on wildlife habitat protection—to center the focus on Newark children and families as we

continue to move Newark forward and improve the environmental health and quality of life in our neighborhoods.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ras J. Baraka'.

Ras J. Baraka, Mayor of Newark

LETTER FROM PLANNING OFFICER

The Department of Housing and Economic Development (EHD) works hard to advance Mayor Baraka's Newark Forward agenda. It is at the cornerstone of our efforts, and we are proud to be part of this effort. The Office of Planning and Zoning, a division of EHD, is deeply committed to building a more equitable and sustainable city. Environmental impacts have too often been overlooked in development decisions in Newark. Our most vulnerable communities have borne the worst burdens of past mistakes, and it is up to us to make sure that new development builds the health of our environment and our residents. This report is an important step towards achieving that goal.

Compiling this information in a single accessible place was a major effort that required the collaboration of our office, the Newark Office of Sustainability, the Newark Environmental Commission, and the community. Planning and Zoning Staff now have a clear resource to guide applicants and board members toward achieving environmental justice and fulfilling the aims of Newark's landmark Environmental Justice and Cumulative Impacts Ordinance.

This timely report is published just as our office begins the process of updating and reviewing the City's Master Plan. The Plan will help to guide city development for the next ten years, just as the previous one has shaped Newark since passage in 2012. This ERI is, in part, a realization of some of the equity and environment policy goals of the previous Master Plan. Now it will also guide us as we engage with the community on updating our Master Plan and developing equity and environmental policy goals for the next ten years.

This report would not have been possible without the strong leadership of Newark's Sustainability Officer, Nathaly Agosto Filión. Her tireless advocacy helped push the ERI from concept to reality. We are proud of our own GIS Planner, Nathan Erwin. Thanks to his hard work and support, alongside Nathaly, our office and the public will have now easy access to the extensive information contained in this report.

We are especially grateful for the hard work of Irena Gorski Steiner and Rachel Bowers, who took on the heavy lift of putting this report together.

Altogether, with the support of the Newark Environmental Commission and community activists, this report represents the kind of strength our city can muster when its officials and community leaders work together to solve and identify the great issues of our time. Our office is fully committed to and proud of this kind of collaboration and community engagement. A more collaborative and participatory Newark is a stronger Newark for all of us.

Sincerely,

Christopher A Watson, City Planning Officer

LETTER FROM THE ENVIRONMENTAL COMMISSION

At Last! An Environmental Resources Inventory for Newark!

In 2016, the City of Newark passed a groundbreaking Environmental Justice & Cumulative Impacts Ordinance with a unanimous vote by the Newark Municipal Council. With this step, Newark acquired a powerful tool for addressing the problems that lead to unhealthy levels of pollution in the region's poorest communities. To date, no other U.S. city has achieved an environmental law of this magnitude.

Newark's history as an early site of innovation and industry is shadowed by the environmental devastation left in the wake of two centuries of intense commercial and industrial activity. The challenge of overcoming the residual effects of a legacy of contaminated soil, air, and water cannot be overestimated. Some of the characteristics that make Newark a dynamic and exciting place to live have negative, long-term effects on people's health, especially for the most vulnerable. The contaminated land left by smelters, tanneries, and factories, some of which used materials like radon, is not easily undone. Other sources of deep contamination – lead from a battery plant; underground plumes of toxic gases

left over from manufacturing processes – require complex measures to protect the population. When combined with pollution emanating from the region's biggest garbage incinerator, major highways, an international airport, scrap metal yards, and thousands of truck trips per week to and from the port, a picture emerges of an environmentally overburdened community, where the infrastructure for running a complex, post-industrial society is heavily and disproportionately concentrated.

The United States Environmental Protection Agency defines Environmental Justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies". They go on to state: "This goal will be achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work."

Newark's Environmental Justice & Cumulative Impacts Ordinance is significant, not only for its focus on environmental justice, but because of its early recognition of the need to identify and address cumulative impacts—the fact that when multiple sources of pollution are present, the effect multiplies exponentially. Adding further pollution to the mix can result in increased pollution that is greater than the sum of its parts. Currently, new laws are coming on stream, at the state and federal levels, which recognize cumulative impacts. But Newark did it first.

This Environmental Resources Inventory will become an important resource in evaluating permit applications for Newark, because now we will be able to see the whole picture—past and present, ambient and static—of the factors affecting the environment and general conditions that must be taken into account in planning for future development. It is nothing short of a monumental work for carrying us into the future.

Newark's Environmental Justice & Cumulative Impacts Ordinance stipulates that the Newark Environmental Commission is required to develop an

Environmental Resources Inventory (ERI) within twelve months of the passage of the Ordinance. This proved to be impossible for a commission composed of volunteers with no money, no spare time, and no GIS mapping skills. The set of maps contained in this ERI meets the requirements set out in the Ordinance in that it shows all the required facilities and conditions together with the requisite demographic information for understanding and tracking the effects of pollution on populations. However, completing a task this size for a city the size of Newark could not become reality until the right support and the right conditions were in place.

We wish to recognize Nicky Sheats and Ana Baptista, both of the New Jersey Environmental Justice Alliance, for conceiving of and developing Newark's Environmental Justice & Cumulative Impacts Ordinance. Your vision contains multitudes and has inspired New Jersey's new statewide Environmental Justice Law, through which New Jersey becomes the first state in the nation to require mandatory permit denials if an environmental justice analysis determines a new facility will have a disproportionately negative impact on

overburdened communities. This latest development is bound to strengthen what we will be able to do in the future here in Newark.

We want to thank Newark's Sustainability Officer, Nathaly Agosto Filión, for taking what we began as a volunteer effort and turning it into a professional piece of reality. We thank the Victoria Foundation for seeing the need and acting accordingly.

We thank Nathan Erwin, GIS Planner, for his support in compiling and developing the map layers informing the ERI report, as well as for his on-going role in ensuring that these data are made broadly and easily accessible through the City's website.

We want to extend special thanks to Jacqueline J. Mitchell and Jolynn Schmidt, who carried out the first round of mapping for the ERI between 2016 and 2018. They did so as volunteers while enrolled in graduate programs at the Milano School of Policy, Management and the Environment at The New School (Jacqueline) and Penn State University (Jolynn). They carried out their unpaid work with grace, professionalism, and good

will and we are forever grateful to them for helping us get this project started.

We wish to thank Irena Gorski Steiner and Rachel Bowers, who joined the City for the express purpose of taking this project through to the home stretch.

We thank all of those who have struggled for environmental justice in Newark for decades. There are too many of you to name, but Sister Carol Johnston and the long-term work of Nancy Zak must be recognized. Those of you we have not named, know that we honor and build on your work.

Finally, we want to recognize and thank all the members of the Newark Environmental Commission, past and present, for years of patience, friendship, and dedication to the City of Newark.

In gratitude,

The Newark Environmental Commission

ACKNOWLEDGEMENTS

This report was produced as a collaboration between the City of Newark Environmental Commission, Office of Sustainability and Office of Planning & Zoning. The report is authored by Nathaly Agosto Filión, Chief Sustainability Officer, and Nathan Erwin, Senior Planner/GIS Specialist, with research and data visualization support provided by Rachel Bowers and Irena Gorski Steiner, Geospatial Information Systems Analysts serving as graduate interns in the Office of Sustainability. This work borrows from earlier drafts of content for this report by Jacqueline Mitchell, formerly of The New School University, and Jolynn Schmidt, formerly of the Penn State University, who volunteered as graduate students in 2016 and 2017, respectively, with the Newark Environmental Commission.

An advisory committee comprised of Cynthia Mellon and Michael Molina, of the Newark Environmental Commission, as well as Matthew Da Silva and Timothy Jenssen, of the City's Department of Economic & Housing Development, aided our research and writing process. We benefited significantly in the formative stages of our research as well as throughout the Environmental Resource Inventory creation process from helpful

conversations with environmental justice policy experts and board members of the New Jersey Environmental Justice Alliance, Dr. Ana Baptista, Assistant Professor of Professional Practice at The New School University, and Dr. Nicky Sheats, Esq., Director of the Center for Urban Environment at the John S. Watson Institute for Public Policy at Thomas Edison State University. We extend our thanks to the entire Newark Environmental Commission, including the aforementioned advisory committee members as well as William Barnes, Nicole Miller, Anthony Timmons and Wynniefred Victor Hinds, who co-hosted a three-part series of public meetings in the fall of 2020 and contributed quotes and photos to this report.

We would also like to thank the Newark residents and stakeholders who attended these meetings and graciously contributed their experience, and insights to the project team. Lastly, we wish to thank our technical reviewers: Peter Chen of Advocates for Children of NJ, Stephanie Greenwood of The Victoria Foundation, Andrew Tabas of NJ Future, Jacob Koch of Bloomberg Associates, Robert Thomas and Jon Gordon of the City of Newark, and Ameesha Mehta-Sampath and Nicki

Alexander of the Environmental Protection Agency.

This report would not have been possible without the relentless devotion of Newark's environmental justice advocates who promoted the inclusion of an Environmental Resource Inventory requirement in Newark's Environmental Justice & Cumulative Impacts Ordinance. We are grateful for their commitment to this mission – we hope this report supports their continued work toward the goal of environmental justice in Newark and beyond.

This report was created with support from the Victoria Foundation.



[The Victoria Foundation](#) seeks to improve the lives of children and families in Newark, New Jersey, and to protect water resources and preserve open space statewide.

[The Newark Office of Sustainability](#) works with city agencies, partner organizations

and community members to make Newark cleaner, greener, healthier, and more prepared and more engaged.

The [Newark Office of Planning & Zoning](#) works to ensure a fair, open and efficient process for updating our city's built environment. We advise developers and homeowners alike on how they can help to build a Newark that will benefit all Newarkers.

The [Newark Environmental Commission](#) is made up of Newark residents who serve in a volunteer capacity. The Commission advises the Mayor and the Municipal Council on issues of the environment and sustainability.

Dedication

Dedicated to the memory of Dr. Clement Alexander Price—historian, community activist, lover of Newark...



Dr. Clement Alexander Price (October 13, 1945 – November 5, 2014) was a distinguished professor at Rutgers University-Newark and longtime resident of Newark, New Jersey. He was named Newark City Historian in 2014, and

was celebrated for decades as a historian, teacher, mentor, patron of the arts and humanities, public servant, advisor to leaders at the university and at all levels of government up to and including the White House, and a clear-eyed observer of Newark. Dr. Price began teaching history at Rutgers University-Newark in 1969. Rutgers appointed him Board of Governors Distinguished Service Professor in 2002, one of the university's highest faculty honors, citing his dedication "to the ideas of community, and his sustained impact on the development of cultural, civic, educational and academic institutions in the City of Newark and the State of New Jersey," as well as his "unwavering commitment to the communities in which he lives, and his concern for social justice." At Rutgers, Dr. Price filled many roles, as teacher, mentor, and advisor, and as director of The Rutgers Institute on Ethnicity, Culture, and the Modern Experience, which he founded in 1996.

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"Newark has a legacy of concerned local advocates fighting to make the city a healthy place for all our residents. This work continues in every ward of the city creating a healthier, cleaner, more equitable and sustainable Newark."



CHAPTER 1: INTRODUCTION

An equitable and clean environment can strengthen the health and prosperity of our city. When this urban environment is taken for granted, however, our residents suffer higher risks of certain illnesses, steeper inequality, and stronger barriers to opportunity. In the 21st Century, the City of Newark's sustainability commitments recognize this reality and center on the needs of Newarkers—children, families, businesses, and community institutions—with a goal of ensuring that our environment is a positive force in the life of our City.

Newarkers inherited a legacy of industrial and commercial development that burgeoned before the existence of land use zoning or environmental regulations. As a result, our built environment reflects a history—both long-ago, and in recent memory—where local environmental and public health outcomes took a back seat to economic or other interests.

The City of Newark Environmental Justice & Cumulative Impacts Ordinance (EJCIO) seeks to correct these imbalances. Passed by City Council in 2017, the ordinance enshrines into law a mandate that we take environmental impacts seriously and protect the communities that already shoulder the most harmful environmental burdens—like high levels of air pollution or limited access to green space. Along with the mandate, it requires a regularly published report on the state of Newark's environment to better inform the community and guide decision-making. This report, the Newark Environmental Resources Inventory (ERI), will build a baseline understanding of the relationships between environment, land use, public health, and neighborhood quality of life within Newark, while providing a framework for continuing to monitor these relationships in the future.

ABOUT THIS REPORT

The Newark ERI report reflects the City's commitment to environmental justice, expanding upon traditional Natural Resources Inventory (NRI) models, which typically include an objective index and description of natural resource features in a municipality. While an NRI is designed for use by natural resource managers (i.e., to guide endangered species protection and other conservation efforts), the ERI approach goes beyond the natural world to connect environmental conditions and the built-environment to human outcomes—with a special emphasis on "Communities with Environmental Justice (EJ) Concerns," which shoulder the highest burdens. One central goal of the Newark ERI is to create a clear and useful resource for Newarkers to develop a better understanding of the inequitable distribution of environmental "goods" (parks, gardens, and other green spaces) and "bads" (pollution emissions sites and contaminated areas) across the City.

The United States Environmental Protection Agency (EPA) defines Environmental Justice as "the right of all persons, regardless of race, color, national origin, ethnicity, income or other demographic or geographic characteristics, to have access to a safe,

healthy living environment." Throughout the country, polluting facilities are significantly more likely to be sited in or adjacent to majority Black neighborhoods, communities dominated by people of color and immigrants, and low-income areas—a trend reflecting the vile history of racism and oppression that directly conflicts with the values of Newarkers.

The Newark ERI serves as one component of the City's multi-pronged approach to fighting institutional racism, in all its forms. This report includes visuals to help the public, local decision-makers (including but not limited to Newark's Central Planning or Zoning Boards), and other stakeholders better understand environmental features within our borders, and their proximity to overburdened communities. In the following pages, readers will find maps, figures, tables, and other graphics accompanied by brief explanations of environmental conditions throughout the City of Newark. These maps are meant to "stand alone," providing readers basic information about ecological features, infrastructure systems and demographic data, deepening our collective understanding of Newark's neighborhoods. This report is organized into four sections, each exploring different aspects of the City

environment: information pertaining to environmental pollution (Part I: Pollution Source & Contaminated Sites); additional human-influenced parts of the Newark environment (Part II: Climate & Built Environment); various indicators of community health and well-being (Part III: Community & Population Characteristics); and the "natural world" (Part IV: Natural Conditions).

The other central goal of this report is to be an informational resource for decision-makers, particularly those considering future development and redevelopment initiatives in the City of Newark. It provides an easy-to-read reference document, which elevates concerns about existing and potential environmental injustices resulting from the cumulative burden of pollution in certain areas of the city; a required reference document used to support the implementation of the EJCIO. The EJCIO is nationally recognized legislation that requires applicants for commercial or industrial developments to submit an environmental checklist with their application to the City's Central Planning Board and/or Zoning Board of Adjustment. The checklist requires applicants to detail how they are proposing to avoid or mitigate environmental harms in overburdened

areas. Development applicants are required to use the ERI report to aid in their application submission. To that end, the Office of Planning & Zoning has made the Geospatial Information Systems (GIS) and other data used in the ERI report available for viewing or download at <https://data-newgin.opendata.arcgis.com/>. The ERI appendices include additional items of relevance, including but not limited to the EJCIO legislation and methodology used to create maps.

This ERI report was developed in the Fall of 2020, and will be updated every three years, at a minimum. The publication of this report is especially timely, given the recent passage of a new statewide Environmental Justice Law, N.J.S.A. 13:1D-157 which requires the New Jersey Department of Environmental Protection “to evaluate environmental and public health stressors of certain facilities on overburdened communities” when reviewing new or renewal permit applications. We consider this a “living document” and welcome any comments, suggestions, or minor corrections. Kindly contact Nathaly Agosto Filión, Chief Sustainability Officer at: agostofilionn@ci.newark.nj.us.

Who can use the ERI?

Table 1: Potential uses of the ERI for decision-makers across Newark

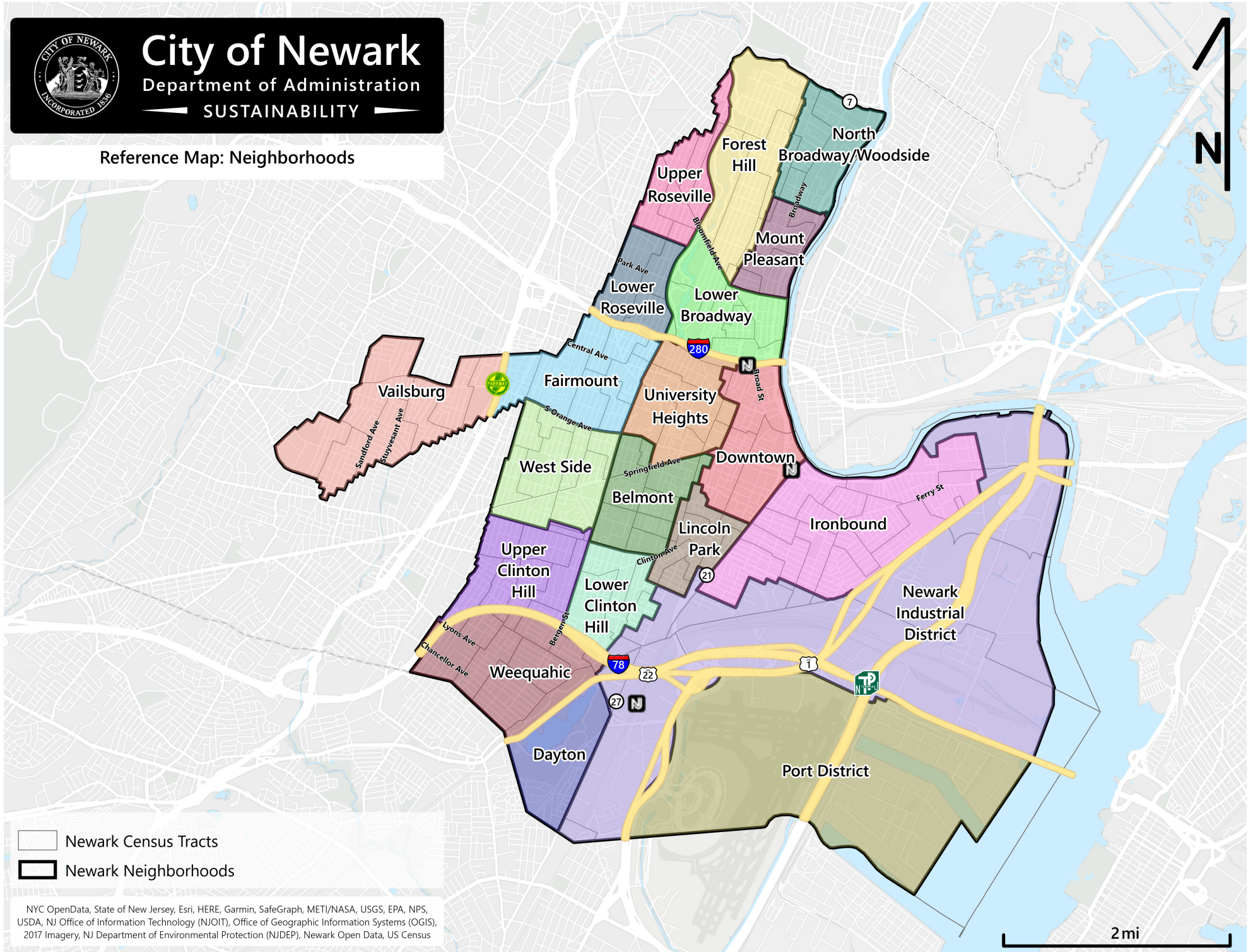
Decision Making Body	Possible Utility of ERI
Newark City Leaders	Use ERI as a resource in advancing citywide sustainability goals and priorities
Newark Office of Planning & Zoning	Incorporate ERI into the City’s master plan and redevelopment planning processes
City of Newark Boards & Commissions	Review ERI while assessing site plans to understand existing context of cumulative burden
Environmental justice advocates	Improve upon and replicate ERI approach to advance environmental justice policies, initiatives and programs, or push back against concerns of environmental racism
Developers	Reference and apply findings from ERI report when completing site plan submission documents and required forms
Researchers, environmental nonprofits, and state policymakers	Use ERI as a resource to better understand Newark’s environmental legacy and support community-led campaigns to improve neighborhood quality of life
The general public and media	Use the ERI to learn about Newark’s neighborhoods and environmental justice initiatives



City of Newark

Department of Administration
— SUSTAINABILITY —

Reference Map: Neighborhoods



NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census

READING THE NEWARK ERI

Most pages in the Newark ERI will be laid out like this spread. The map will be on the left page of the spread, and the corresponding description, information, or tables will be presented on the right page. Some data types have more than one corresponding map; in those cases, additional maps are placed following the spread with the first map and description.

For spatial reference, each map in this report includes symbols for major highways and roadways, as well as larger NJ Transit stops including Newark Penn Station, Newark Broad Street Station and the Newark, NJ - Liberty International Airport Station.

The map on the opposite page ("Reference Map") shows Newark's neighborhoods (as delineated by the Office of Planning & Zoning and codified in the November 2014 Newark Zoning and Land Use Regulations") overlaid on census tracts. We invite readers to use this map as a reference to identify neighborhoods where different mapped characteristics exist.

Report Methodology

To guide other municipalities wanting to create a similar report, we have provided citations for all information as well as Appendix A with complete methodology for the maps we created for this report. This appendix may also be useful for those seeking a detailed understanding of the data represented in maps throughout the report.

HOW THE EJCIO FITS WITH THE EJCIO AND THE LAND DEVELOPMENT PROCESS

The EJCIO seeks to uphold environmental justice by interjecting a detailed review of cumulative pollution burden and environmental health into the City's development process. It formally incorporates environmental justice as a key consideration in granting approvals for certain major site plans and variances, providing opportunities to shape the City's built environment and prevent further harm to overburdened communities.

In the words of the legislation, the EJCIO serves "to provide additional information to the Newark Environmental Commission, Central Planning Board and Zoning Board of Adjustment and to require additional documentation from development applicants in order to build an improved basis of information on which to create sound environmental and land use policy."

HOW TO USE THIS REPORT

This ERI serves as a primary source of information on environmental conditions for members of the Central Planning Board, Zoning Board of Adjustment, Newark Environmental Commissioners, applicants for new land development, and interested members of the public. This section is intended to provide clarity and support both Covered Applicants who are required by the EJCIO to use the ERI as "a required reference document for any Environmental Review Checklist submitted."

In accordance with Section 1.4.e of the EJCIO, Covered Applicants are required to reference the Newark ERI when submitting an Environmental Review Checklist. This ERI provides all the information needed for applicants to fill out basic and full form questions about the local environmental conditions of the community their project may impact. While not all components of the Newark

ERI will be necessarily be relevant to a Covered Applicant's proposed project, the ordinance and required forms set forth a framework for describing and addressing environmental benefits and impacts associated with the proposed project. Please reference Appendix C for additional guidance on how to use this ERI to complete and review an Environmental Review Checklist (basic form or full form).

The maps and other data used in this ERI report are available for viewing or download at <https://data-newgin.opendata.arcgis.com/>.

Overview of the EJCIO In Action

In general, land development in Newark begins with the submission of a Board Application to the Office of Planning and Zoning. Planning and Zoning staff then determine which Boards or Commissions need to review and approve the project to move forward (see Newark Zoning & Land Use Regulations, Appendix B). At this point, Planning and Zoning staff will also determine whether the project requires an additional environmental justice review in accordance with the EJCIO.

Table 2: Overview of the EJCIO in Action

Step 1. Internal Review for EJCIO Required Forms

EJCIO rules only apply to projects which:

Include any commercial, light manufacturing or industrial uses

AND:

Requires action from statewide or regional actors, i.e.:

- » Reviews or approvals from the US EPA
- » Reviews or approvals from the NJ DEP
- » Inclusion in the Essex County Solid Waste Management Plan

Step 2. Submission of EJCIO Required Forms

If the project requires a major site plan or variances, the applicant must fill out and submit an Environmental Review Checklist (see Appendix B). The completed checklist will include a cover letter with basic information about the project, permits/reviews/approvals needed, as well as either the basic or full Environmental Review form. Projects with commercial or light manufacturing uses—including those within any of the mixed-use “MX” zones—need only fill out the shorter basic form, outlining activities which could impact the environment and can include any mitigation strategies (see the EJCIO ordinance and forms for full descriptions, Appendix B). Projects which include any industrial uses must complete the full form, providing more details about the project, pre-existing environmental conditions, and a more extensive description of any potential environmental impacts.

Step 3. Environmental Commission Advisory Opinion

Upon receipt by the Office of Planning and Zoning, the full Checklist will be sent to the Central Planning or Zoning Boards as well as the Newark Environmental Commission—a panel of Newark residents appointed by the Municipal Council. The Newark Environmental Commission may then submit an advisory opinion regarding the project to the other boards.

GLOSSARY OF DEFINITIONS AND IMPORTANT RECURRING ACRONYMS

Term	Meaning
AMI	Area Mean Income
BIPOC	Black, Indigenous, and People of Color (term which arose in the mid-2010s to highlight not only the systemic racism which continues to oppress all people of color but additionally illuminate the specific injustices facing Black and Indigenous folks, including but not limited to the impact of slavery, genocide, and police brutality)
CAA	Clean Air Act (mandates that the USEPA set National Ambient Air Quality Standards for a set of six selected air pollutants referred to as Criteria Air Pollutants that can be harmful to human health and the environment and are unfortunately common in outdoor air as well as regulate a more toxic and carcinogenic set of pollutants referred to as Hazardous Air Pollutants using site-specific emission standards)
CAPs	Criteria Air Pollutants (ground-level ozone, particulate matter (PM _{2.5} and PM ₁₀), carbon monoxide, sulfur oxides, nitrogen oxides, and lead regulated by the Clean Air Act)
CEA	Ground Water Classification Exception Area (area where the New Jersey Department of Environmental Protection has designated that either the natural groundwater quality or the localized effects of a permitted discharge render an area unsuitable for use as an aquifer)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (regulates superfund cleanup)
CSO	Combined Sewer Overflow (in a combined sewer system, when there is a large influx of stormwater which mixes with untreated waste and overflows to a waterbody)
Cumulative Impact	The combined impact of all past and present environmental hazards and social stressors (a concept made to draw attention to the fact that current environmental policy is focused narrowly on specific pollutants and their sources but meanwhile in order to actually protect health, we must take into account that racial or ethnic minority groups and low-income communities are more frequently exposed to multiple environmental hazards and social stressors which have a cumulative impact on health)
Environmental Justice (EJ)	See call out box on page 23
EJCIO	Newark's Environmental Justice and Cumulative Impacts Ordinance (copy provided in Appendix B)
EJSCREEN	Environmental Justice Screening and Mapping Tool (https://www.epa.gov/ejscreen ; data used to create several maps in this report)

Environmental Justice

Environmental Justice is defined as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (USEPA, 2018); those fighting for it are concerned with the distribution of environmental benefits and burdens among populations, as well as the fairness of relevant decision-making processes.

A landmark report, *Toxic Waste and Race in the United States* (1987), which helped to catalyze the national environmental justice movement, confirmed that race was the primary factor in determining the siting of toxic wastes (United Church of Christ: Commission for Racial Justice, 1987). In fact, despite great improvements in public health over the past century in the United States, three of the best predictors of health outcomes remain ZIP code, race/ethnicity, and socioeconomic status (Adler & Rehkopf, 2008; Bell & Lee, 2011; Centers for Disease Control and Prevention, 2010; Smith, 2007). Motivated to change this, the environmental justice movement, while full of a variety of individuals and organizations with different specific objectives and strategies, has been broadly guided by 17 principles of Environmental Justice drafted and adopted by delegates to the First National People of Color Environmental Leadership Summit held in 1991 in Washington DC. In Newark, there are many organizations and individuals committed to fighting for environmental justice, including those who are responsible for driving the passage of the Newark Environmental Justice & Cumulative Impacts Ordinance.

ERI	Environmental Resource Inventory (this report)
HAPs	Hazardous Air Pollutants (also known as “air toxics”, including chemicals such as benzene, formaldehyde, cadmium, and vinyl chloride, which are regulated by the Clean Air Act using site-specific emission standards)
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPL	Federal Poverty Line
GIS	Geographic Information Systems (used to create the maps in this report)
Land Use	Describes how humans use, manage, and modify land, representing economic and cultural uses practiced in a given area. The original inhabitants of Newark are the Munsie-Lenape, who are part of the Algonquin nation. The land is now regulated by the City of Newark in classifications of public and private land uses including residential, commercial, industrial, airport, and port (more information on Newark’s land uses and zoning regulations, please refer to Appendix B)
NDVI	Normalized Difference Vegetation Index (a measure of greenness by satellite)

NFA	No Further Action
NJDEP	New Jersey Department of Environmental Protection (state-level regulatory agency responsible for managing NJ's natural resources and addressing pollution)
NJPDES	New Jersey Pollutant Discharge Elimination System (protects New Jersey's ground and surface water quality by assuring the proper treatment and discharge of wastewater and its residuals, and stormwater from diverse types of facilities and activities)
NPL	National Priority List (for Superfund Sites)
PM _{2.5}	Inhalable atmospheric particulate matter that have a diameter of less than 2.5 micrometers
PM ₁₀	Inhalable atmospheric particulate matter that have a diameter of less than 10 micrometers
PVSC	Passaic Valley Sewage Commission
RCRA	Resource Conservation and Recovery Act (regulates hazardous waste management)
SLOSH	Sea, Lake, and Overland Surges from Hurricanes model from the National Weather Service used to determine hurricane evacuation areas based on storm surge heights and inundation extent
TRI	Toxic Release Inventory which tracks the management of certain toxic chemicals being emitted from facilities
USEPA	United States Environmental Protection Agency (federal regulatory agency with the mission to protect human health and the environment via laws and regulations to prevent and remediate contamination of air, water, and soil)
WMA	Watershed Management Area
Zoning	A system of regulations which impose use (building or land use) and bulk (size, shape, and location of development) standards on new construction/development around the city; used by Newark, and most other American cities. Newark properties are assigned to one of over 20 "Zoning Districts", each allowing for a certain kinds of land uses (e.g., residential, commercial, industrial) and a set of physical (bulk) standards—with restrictions on physical characteristics like building setbacks from the street or property line, building heights, amount of impervious surface covering the property, etc.

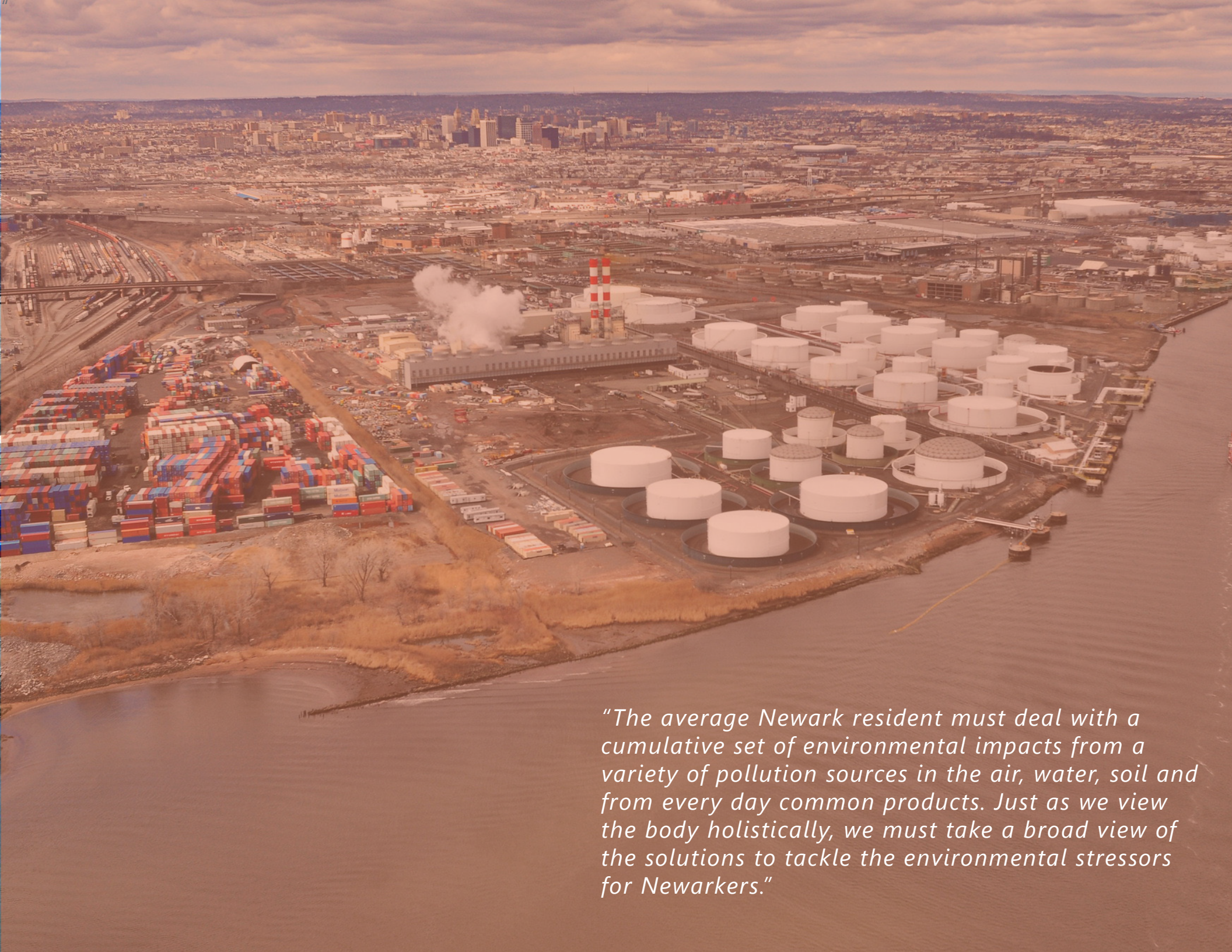


Senator Cory Booker introducing his Environmental Justice bill in Newark in 2017.





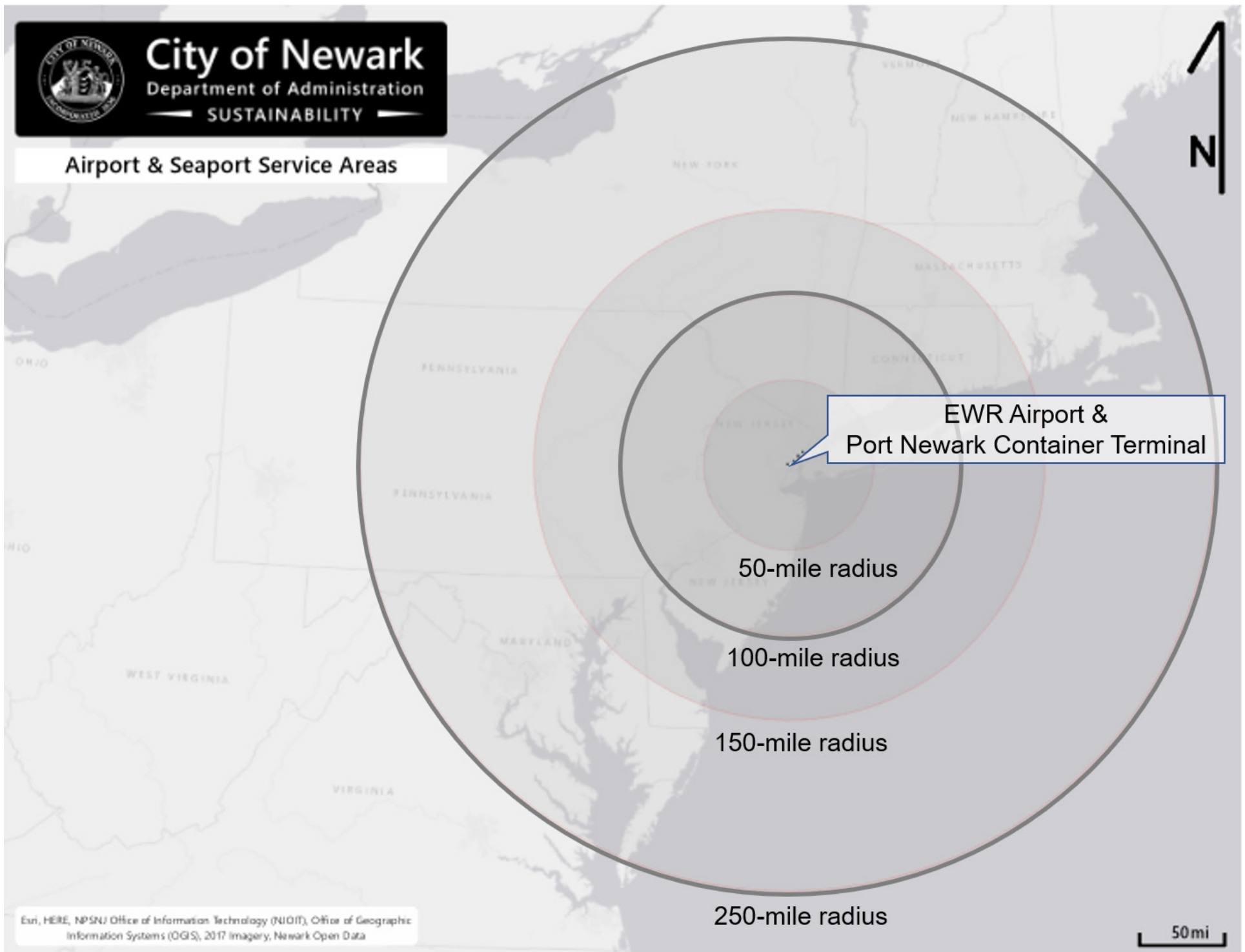
PART I: POLLUTION SOURCES AND CONTAMINATED SITES



"The average Newark resident must deal with a cumulative set of environmental impacts from a variety of pollution sources in the air, water, soil and from every day common products. Just as we view the body holistically, we must take a broad view of the solutions to tackle the environmental stressors for Newarkers."

CHAPTER 2: CUMULATIVE IMPACTS OF POLLUTION AND CONTAMINATION

The health and quality of the local environment faces many threats due to a long history of industry and commerce in our region. The burden of old and new pollution is not equally felt across the state of New Jersey, or even within Newark neighborhoods. The following section of this report reviews the available data regarding Newark's air quality, water quality, and soil quality. It includes the currently permitted sources that emit pollution that can threaten community health and well-being. This analysis includes a summary of sites where historical contamination has limited the available development options in our community.



2A: INFRASTRUCTURE FOR THE BROADER REGION

REGIONAL INFRASTRUCTURE

Newark is home to infrastructure of great regional significance, including the Newark airport and seaport, the Passaic Valley Sewerage Commission (PVSC) wastewater treatment facility, the Covanta waste-to-energy incinerator, the PSEG Essex Generating Station, a network of freight rail lines and yards, and warehousing and distribution centers that link Newark to consumers throughout the Northeast. While each of these facilities support a level of economic vibrancy that attracts an impressive array of innovators and business leaders, they also place a level of environmental burden on fence-line communities, those living in neighborhoods directly adjacent to these major infrastructure assets.

One-third of the cargo arriving on the East Coast (i.e., over four million shipping containers per year) enters the United States through the docks of Port Newark; this amounts to an estimated \$200 billion in goods moving through the port annually (Alex & Lynn, 2019). The majority of these goods end up in warehouses, store shelves, industrial and manufacturing facilities, and doorsteps located within a day's drive (or approximately 250-mile radius, see Map 1) of their point of arrival in Newark.

To reach consumers and end-users, cargo is primarily transported by trucks (and, to a lesser extent, rail) traveling through Newark's East and South Ward neighborhoods en route to their final destination.

This pattern is played out in reverse when we consider the solid waste and wastewater that returns to Newark for disposal.

The PVSC wastewater treatment facility treats waste from towns in Bergen, Essex, Hudson, Passaic, and Union counties (Figure 1), and Covanta Essex, a waste-to-energy incinerator also known as the Essex County Resource Recovery Facility, incinerates waste from most of Essex County as well as from much of Manhattan as shown on Map 2 (Johnson, 2010). The EPA has developed a hierarchy ranking the various waste management strategies from most to least environmentally preferred as shown on Figure 2. While energy recovery facilities like Covanta Essex are considered more environmentally friendly than treatment and disposal strategies (i.e., landfills), they pose a significant environmental justice concern as they are most often located in communities

with a higher concentration of Black, Indigenous, and people of color (BIPOC). In fact, social scientists have repeatedly found a direct correlation between concentrations of BIPOC communities and the waste processing facilities, starting with a 1987 report commissioned by the United Church of Christ's Commission for Racial Justice found that race was the most significant predictor of a person living near hazardous waste, and that communities in close vicinity to multiple commercial hazardous-waste facilities (as is the case in Newark) had three times the amount of minority residents as communities that were far away from such dump sites (United Church of Christ Commission for Racial Justice, 1987). A report commissioned twenty years later found that patterns had actually worsened (Bullard et al., 2008). We see the same trend with energy infrastructure and other regionally beneficial but locally undesirable land uses (Been, 1992) – such as with power plants like PSEG which is sited in Newark but accounts for approximately 10% of New Jersey's electricity generation and feeds the larger PJM interconnection's service territory (Figure 3; PJM, 2020).

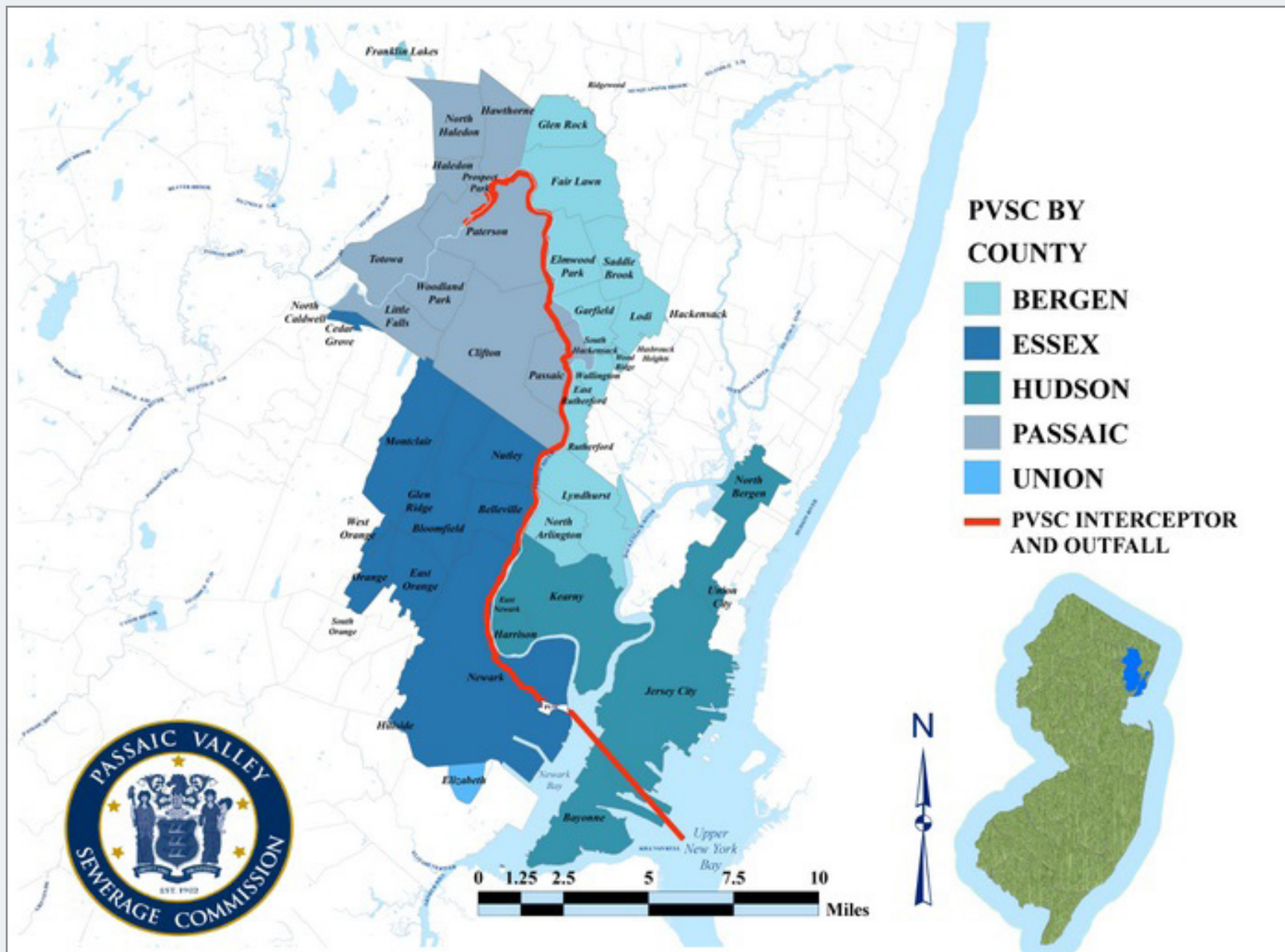
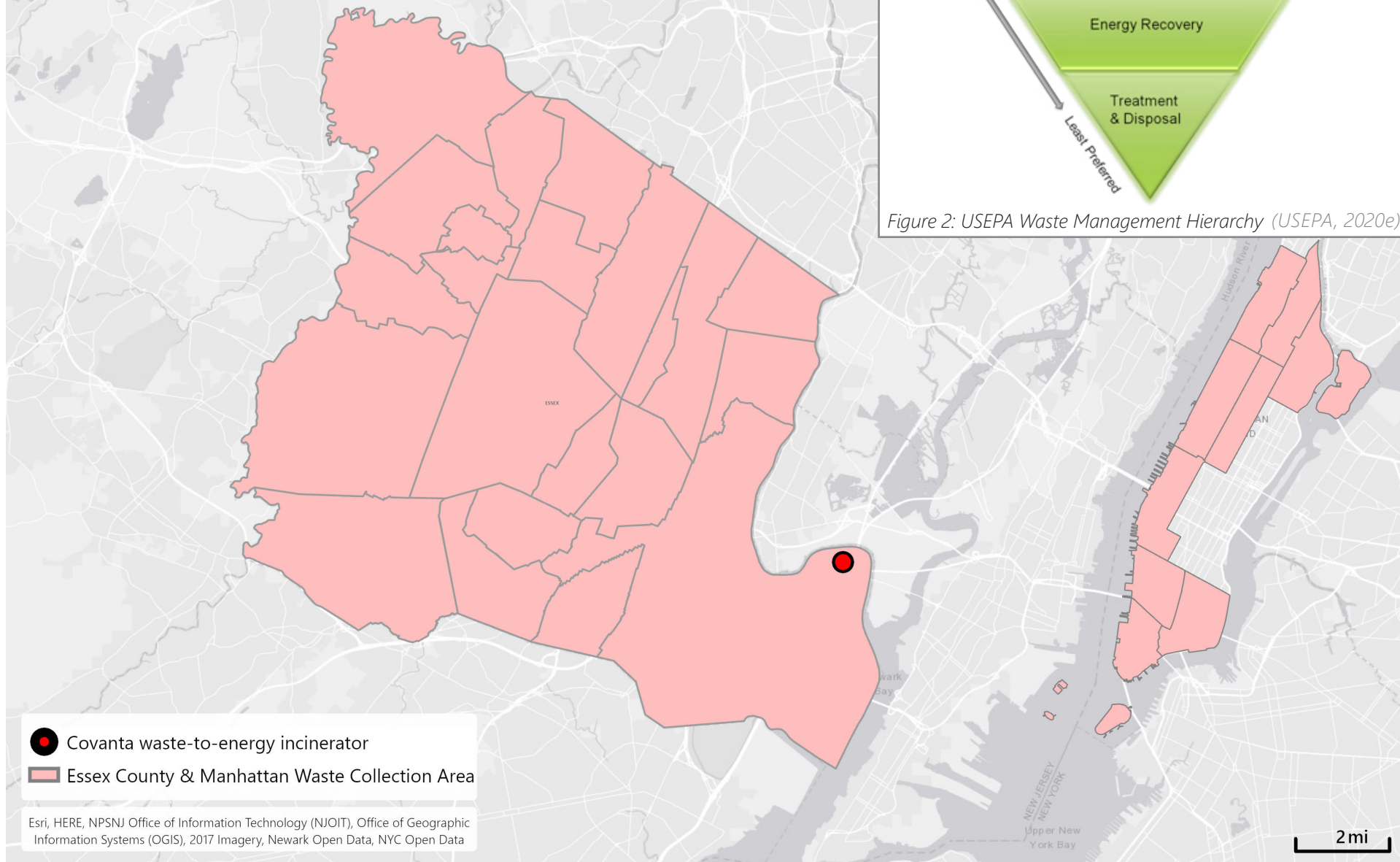


Figure 1: Region serviced by Passaic Valley Sewerage Commission



Covanta Waste Collection Area



Map 2: Region Served by Covanta Waste-to-Energy Incinerator

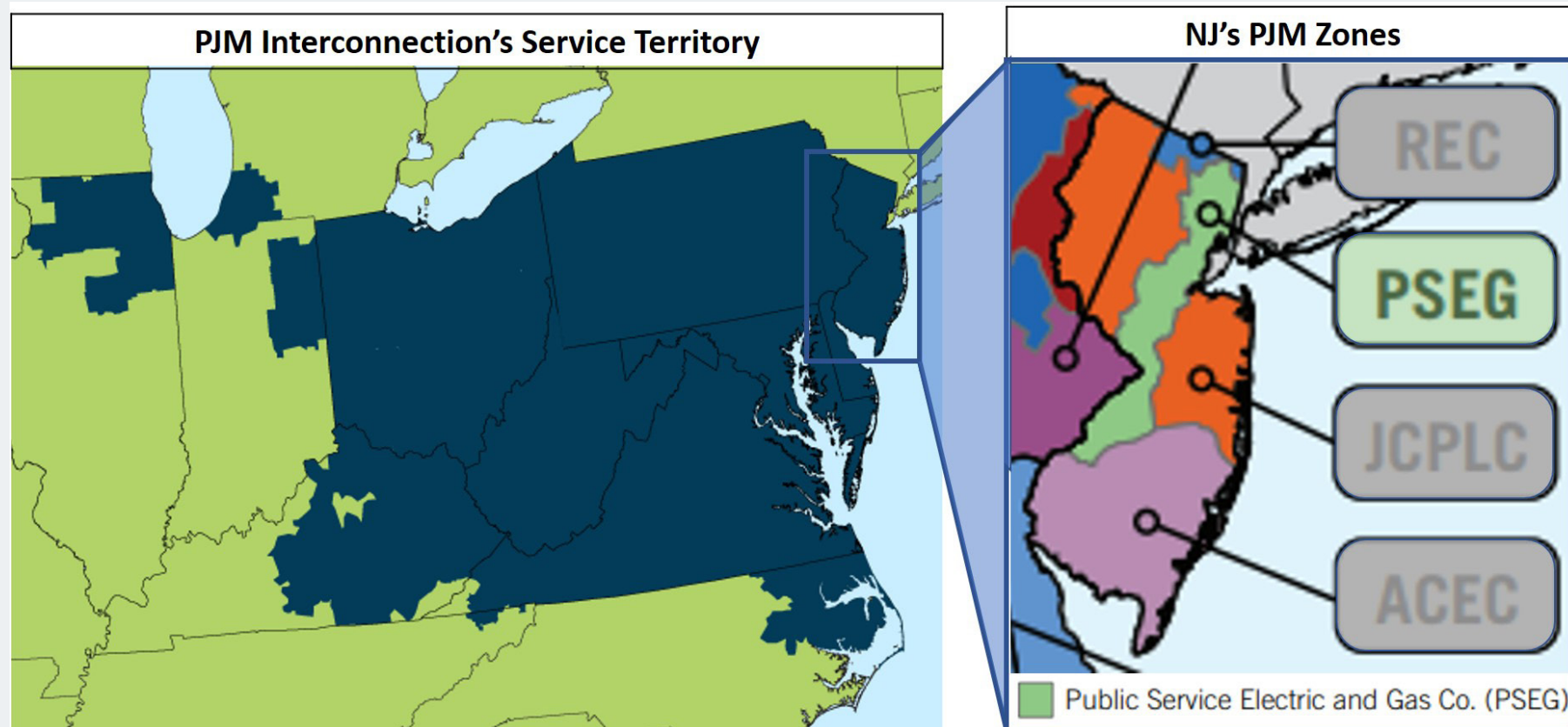


Figure 3: PJM/PSE&G Service Territory

2B: AIR QUALITY

Air quality is a difficult environmental factor to measure because of the dynamic nature of wind patterns, and the fact that pollution sources are numerous, diverse, and often spread out over broad areas. Air knows no boundaries, and in a highly urbanized region like ours, there are various government agencies and regulatory processes governing safe limits to pollution. Despite this complexity, the EPA measures and reports daily air quality in U.S. cities.

MONITORING CRITERIA AIR POLLUTANTS AND AMBIENT AIR QUALITY IN NEWARK

The Clean Air Act (CAA) mandates that the EPA set National Ambient Air Quality Standards for a set of six selected pollutants that can be harmful to human health and the environment and are unfortunately common in outdoor air. These pollutants are referred to as criteria air pollutants (CAPs): ground-level ozone (O₃), particulate matter (PM_{2.5} and PM₁₀), carbon monoxide (CO), sulfur oxides (SO_x), nitrogen oxides (NO_x), and lead (Pb).

The prevalence of criteria air pollutants is measured through a network of monitoring stations located throughout the country, each of which carefully measures the concentration of criteria

air pollutants for a given area. Newark has one Ambient Air Quality Monitoring site located within the Newark Fire Station (Engine 10) at 360 Clinton Ave (USEPA, 2020a). The stations are carefully monitored, and data generated are used to issue air quality alerts—through both traditional media and online platforms—alerting sensitive groups about potential air quality risks on any given day. The EPA's Air Quality Index indicates how clean the air is, and what associated health effects might be of concern. A composite metric is used instead of reporting each criteria air pollutant separately—as the different units are challenging to communicate broadly (e.g., parts per million, ppm, for PM_{2.5} and micrograms

per cubic meter, µg/m³, for ground-level ozone; USEPA 2020a). Figure 4 provides a summary of daily Air Quality Indexes for Newark in 2019 (note: some pollutants were measured more, or less, often than once per day; Home Facts, 2020). Maps 3 and 4 show air concentrations of PM_{2.5} and ground-level ozone, respectively.

Pollutant	Stat. Lat & Long	Good %	0-50	51-100	101-150	151-200	201-300	301-500
Ozone	33.183, -80.0307	95.01%	362	17	1	1	0	0
CO		0.00%	0	0	0	0	0	0
SO2	32.8366, -79.957	100.00%	100	0	0	0	0	0
PM10	35.124, -80.9076	99.63%	268	1	0	0	0	0
PM2.5	32.8366, -79.957	97.91%	281	5	1	0	0	0

The Air Quality Index is rated on a scale from 0 to 500 to communicate the health concern of the measurement; with 0-50 rated as "good", 51-100 as "moderate", 101-150 as "unhealthy for sensitive groups", 151-200 as "unhealthy", 201-300 as "very unhealthy", and 301-500 as "hazardous"

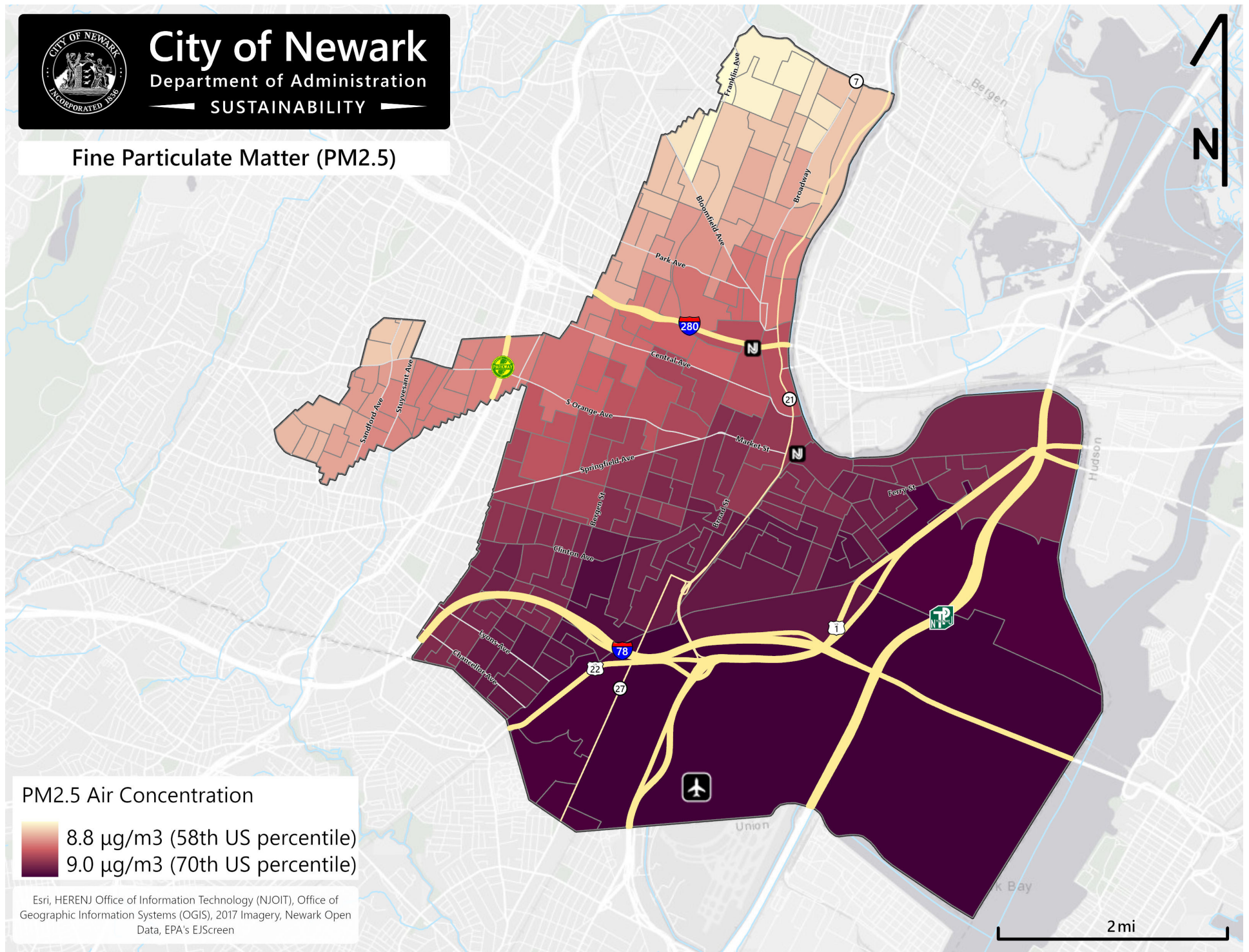
Figure 4: Criteria Air Pollutant Daily Summary for Newark, NJ in 2019



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Fine Particulate Matter (PM2.5)



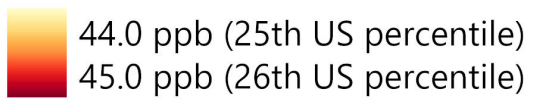


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Ground-level Ozone

Ground-level Ozone Air Concentration



Esri, HERE, NPSNJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, EPA's EJScreen

Map 4: Ground-level Ozone Air Concentration

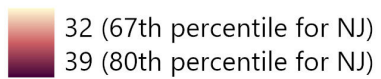


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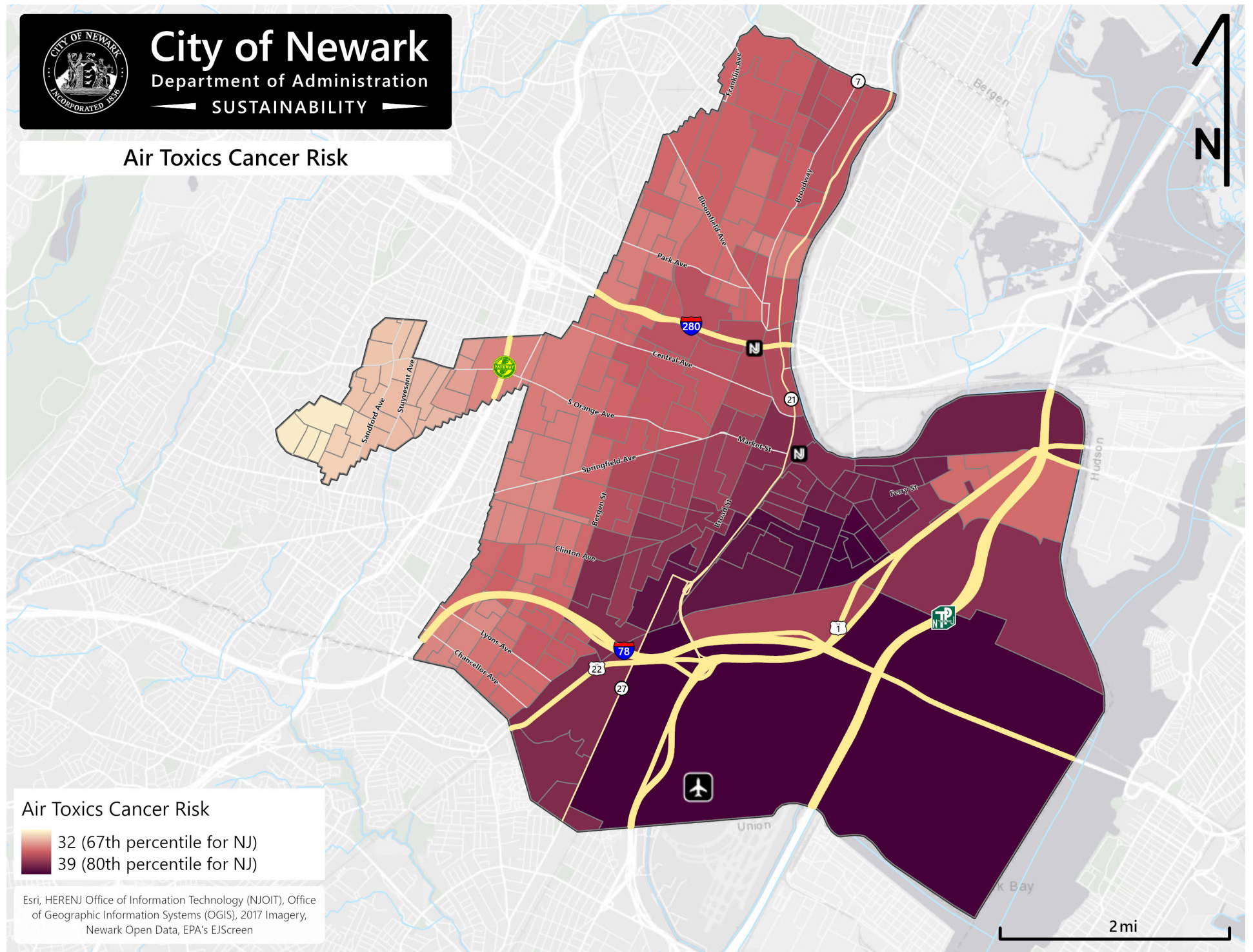
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Air Toxics Cancer Risk

Air Toxics Cancer Risk



Esri, HEREJ Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, EPA's EJScreen



HAZARDOUS AIR POLLUTANTS & STATIONARY EMISSIONS SOURCES

Hazardous air pollutants (HAPs), also known as “air toxics”, are also regulated under the CAA. There are 187 HAPs and they have more limited and industry-specific sources, and—as the name implies—are more toxic and carcinogenic than CAPs. These include chemicals such as benzene, formaldehyde, cadmium, and vinyl chloride, etc., which are regulated using site-specific emission standards (USEPA, 2020b).

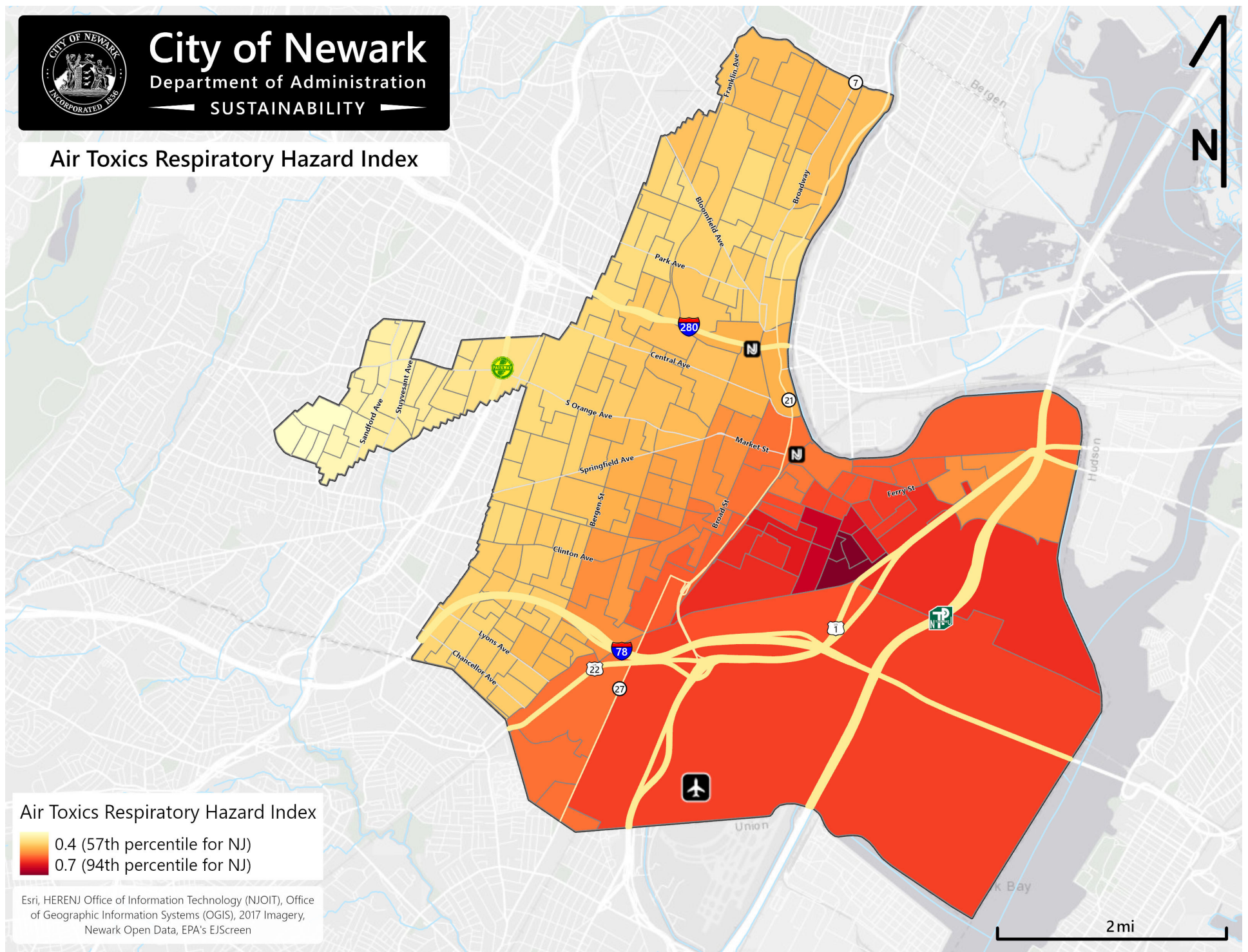
Cancer risk and a respiratory hazard index across the City, based on EPA measurements of air toxics, are shown in Maps 5 and 6. These maps are based on data from the EPA National Air Toxics Assessment, modeled to interpolate between air monitoring stations, and distributed via EJSCREEN, an online tool which was created by EPA to identify neighborhoods that could be candidates for working with to support the agency’s environmental justice work.



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Air Toxics Respiratory Hazard Index





Youth air monitoring and measuring for PM_{2.5} particulate from nearby traffic in 2011.

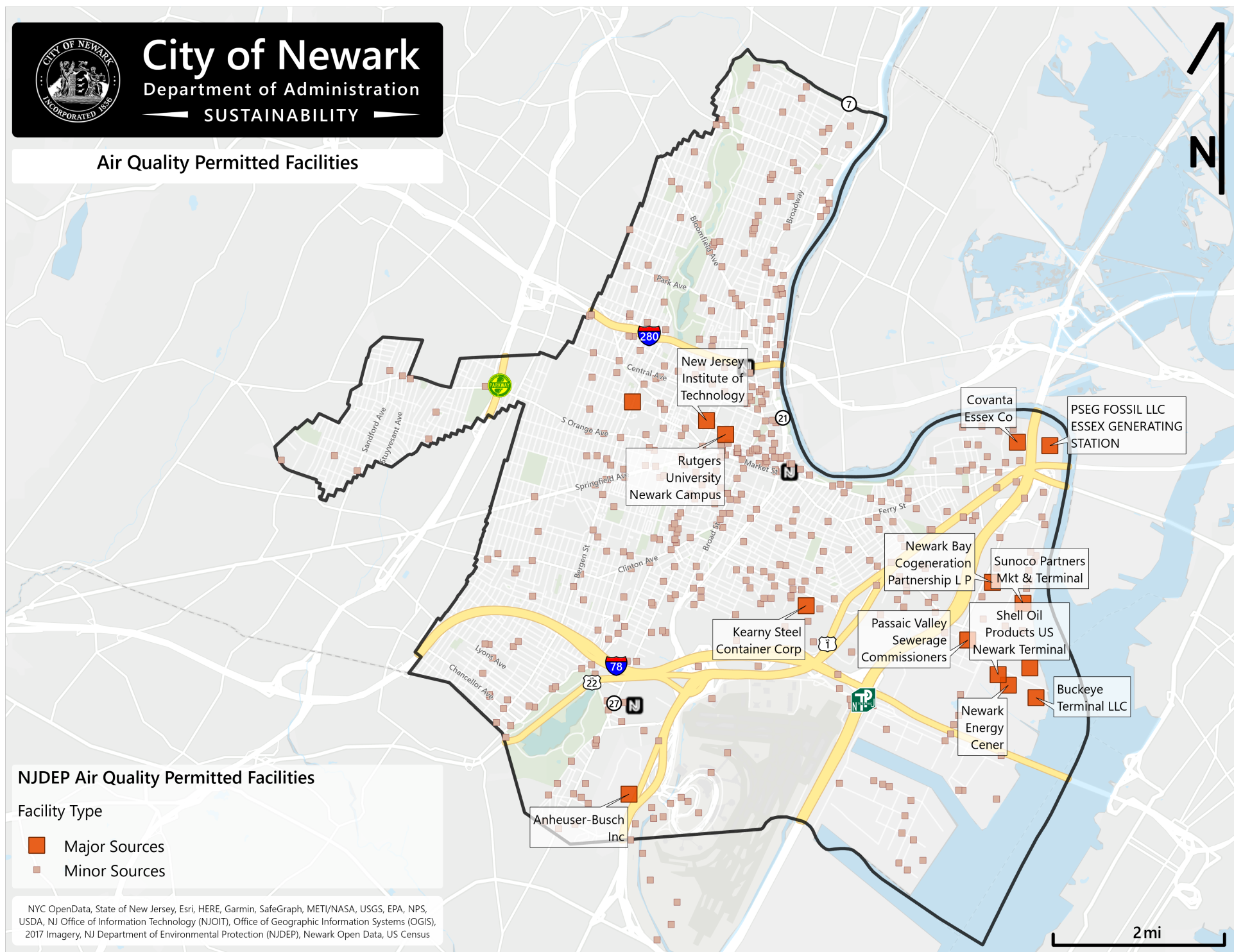


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Air Quality Permitted Facilities



NJDEP Air Quality Permitted Facilities

Facility Type

- Major Sources
- Minor Sources

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census

AIR QUALITY PERMITTED FACILITIES

One of the longest-standing concerns expressed by environmental justice leaders is that a regional approach to air quality monitoring, such as the approach currently used for measuring criteria air pollutants, can generally under-estimate the exposure faced by individuals living or working in close proximity to major sources of criteria air pollutants. Neighborhoods such as Dayton or the Ironbound include power plants, a solid waste incineration facility and other waste transfer facilities, scrap metal yards, and other land uses with a high degree of heavy-duty vehicle traffic common to port-adjacent communities. These kinds of industrial land uses pose a significant risk of pollution exposure in what are commonly known as “fence line communities.” As such, the EPA’s regional approach to air quality monitoring must be mirrored with accurate and timeline reporting of site-specific data.

Under the CAA, the EPA limits the amount of air pollutants and toxins that are emitted by point sources (New Jersey Department of Environmental Protection, 2019a). Map 7 shows the locations of 502 facilities in Newark with active air quality permits, administered by NJDEP. Facilities are given different permits depending

on the type and volume of emissions. Permits are classified either as “major sources” or “minor sources” based on whether they exceed the threshold of 100 tons/year for any criteria air pollutant. The major source threshold for HAPs is 10 tons/year for a single HAP or 25 tons/year for a combination of HAPs. Facilities with major source permits are labelled in Map 7. Minor permits are facilities where potential emissions fall below the major source threshold.



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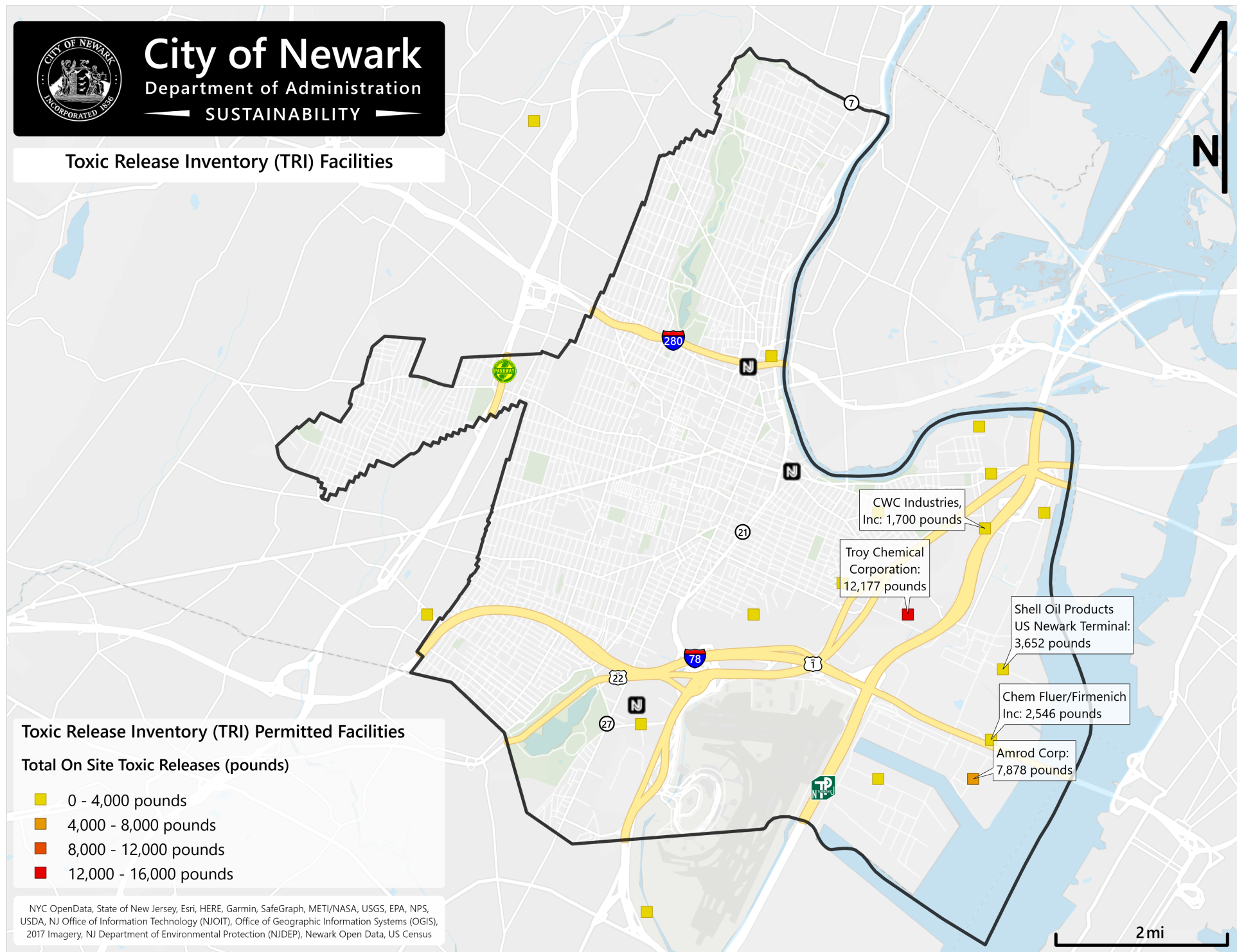
Toxic Release Inventory (TRI) Facilities

Toxic Release Inventory (TRI) Permitted Facilities

Total On Site Toxic Releases (pounds)

- 0 - 4,000 pounds
- 4,000 - 8,000 pounds
- 8,000 - 12,000 pounds
- 12,000 - 16,000 pounds

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



TOXIC RELEASE INVENTORY

The EPA Toxic Release Inventory (TRI) tracks the management of certain toxic chemicals that may pose a threat to human health and the environment (USEPA, 2019). Each year, facilities in different industry sectors across the U.S. must report how much of each chemical is released to the environment (through air, water, or land) and/or is managed through recycling, energy recovery and treatment.

The TRI program was established through the 1986 Emergency Planning and Community Right-to-Know Act (Smith et al., 2013), which was designed to support transparency to the public about toxic chemicals in their communities. There are 15 TRI sites in Newark. According to the latest federal data mapped in Map 8, the TRI facilities reporting the five largest annual on-site releases are listed below; information on the pollutants released is available via [TRI Explorer](#).

Table 3: Top five on-site release from TRI facilities

Facility Name	Facility Type	On-site Releases
CWC Industries	Unlaminated Plastics Film and Sheet Manufacturing	1,700 pounds
Chem Fleur Division of Firmenich	Basic Organic Chemical Manufacturing	2,546 pounds
Shell Oil Products US: Newark Terminal	Petroleum Bulk Stations and Terminals	3,652 pounds
Troy Chemical Corp	Paint and Coating Manufacturing	12,177 pounds
Amrod Corp	Copper Rolling, Drawing, Extruding, and Alloying	7,878 pounds

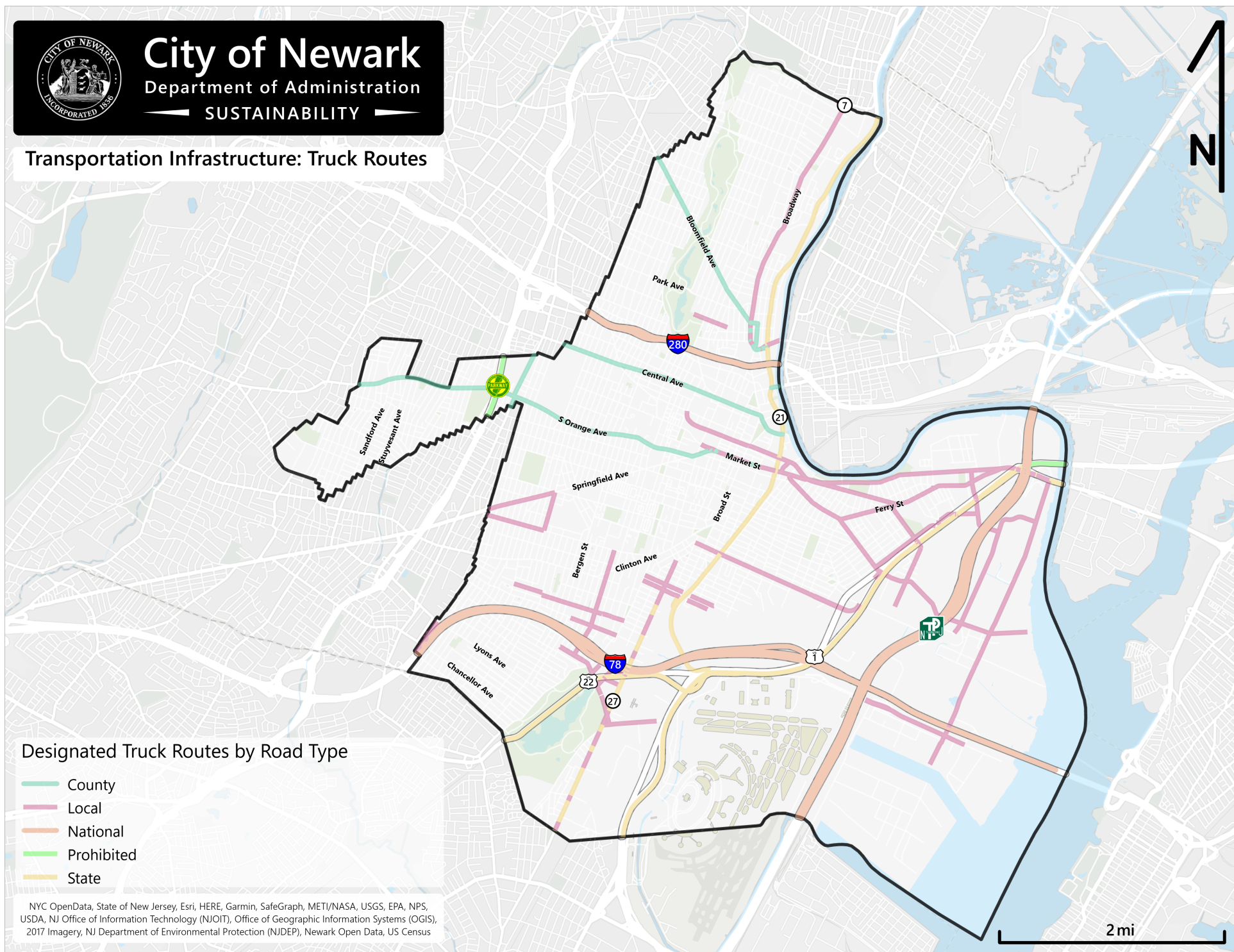
(United States Environmental Protection Agency)



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Transportation Infrastructure: Truck Routes



TRAFFIC-RELATED AIR POLLUTION

Diesel trucks are a major mobile source of toxic air contaminants and exposure to diesel exhaust is associated with increases in the risk for cancer as well as other lung, heart, metabolic, reproductive, and cognitive health issues (Union of Concerned Scientists, 2008). Communities close to ports and other goods movement infrastructure (e.g., warehouses, logistics centers, and railyards) experience higher levels of truck traffic, both from surrounding thruways and on local streets. There are several designated truck routes in Newark (Map 9), managed at the local, county, and state level. Standards and procedures for truck operations in New Jersey are generally defined by administrative code (N.J.A.C. 16:32). The code spells out permitted routes, width restrictions, length requirements, access to terminals and other facilities. Air pollution specifically from traffic (i.e., diesel particulate matter, nitrogen oxides, and fine particulate matter) can be estimated based on traffic proximity and volume (Map 10); diesel particulate matter in particular is shown in Map 11.

Railways are also a major mobile source of CAPs and HAPs. There are many industrial railways in Newark (Map 12),

and their air emissions are monitored as part of the hazardous materials management information section of the New Jersey Worker and Community Right to Know Act.

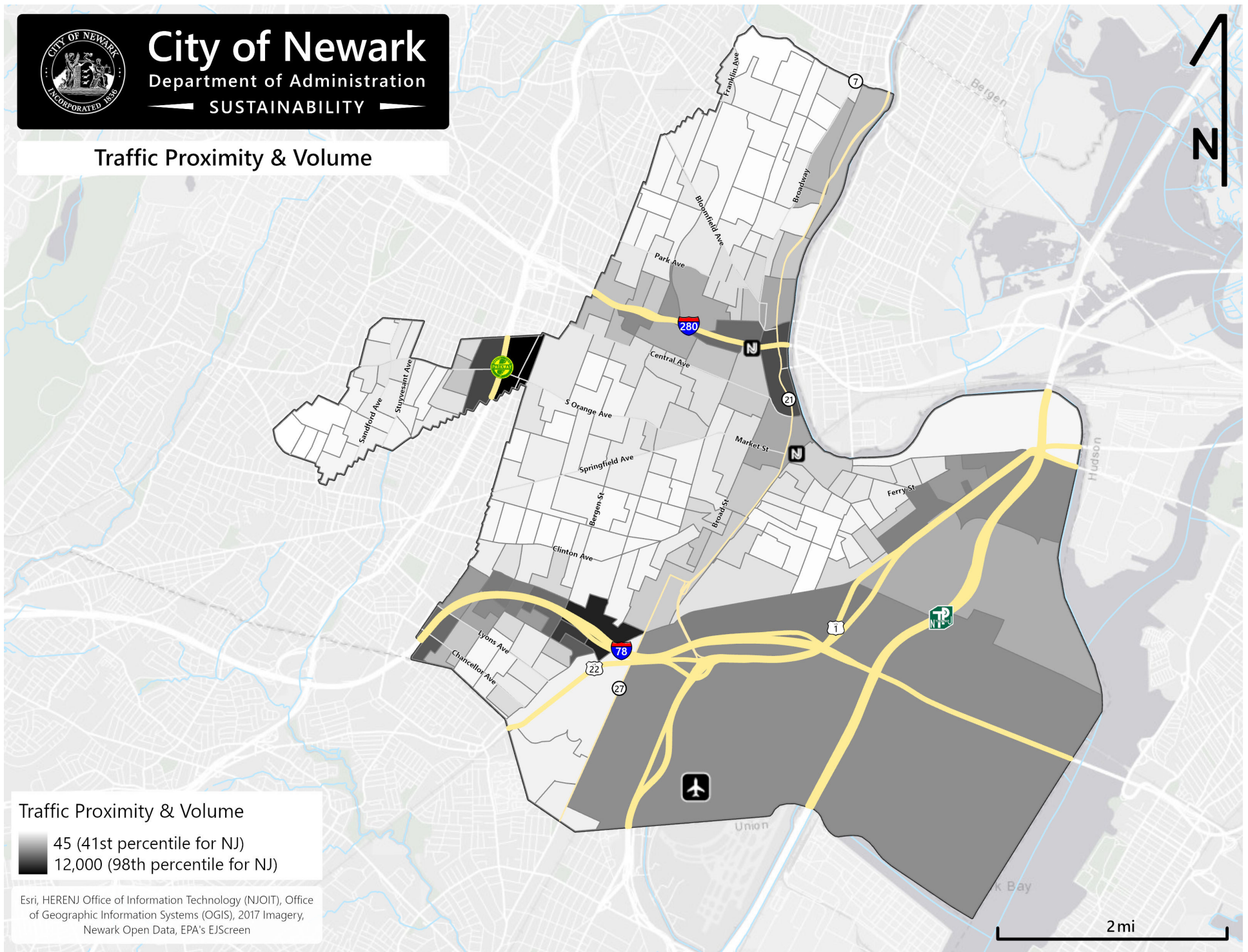
A recent analysis commissioned by the New Jersey Environmental Justice Alliance of transportation-related emissions in and around the ports of Newark and Elizabeth (including Newark Airport and the ports of Newark and Elizabeth), both roadway and non-roadway emissions sources (Figure 5), found that the highest transportation emissions burden is in locations close to high density truck and bus routes and/or port facilities and rail yards but that total emissions exposure, and relative contribution from different transportation sources, varies significantly across the area. Further, they found that emissions of PM_{2.5}, black carbon, and NO_x from non-roadway sources, particularly locomotives and port operations, have the highest air quality impact in the port area, followed by medium- and heavy-duty vehicles (M.J. Bradley & Associates, 2020).



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Traffic Proximity & Volume

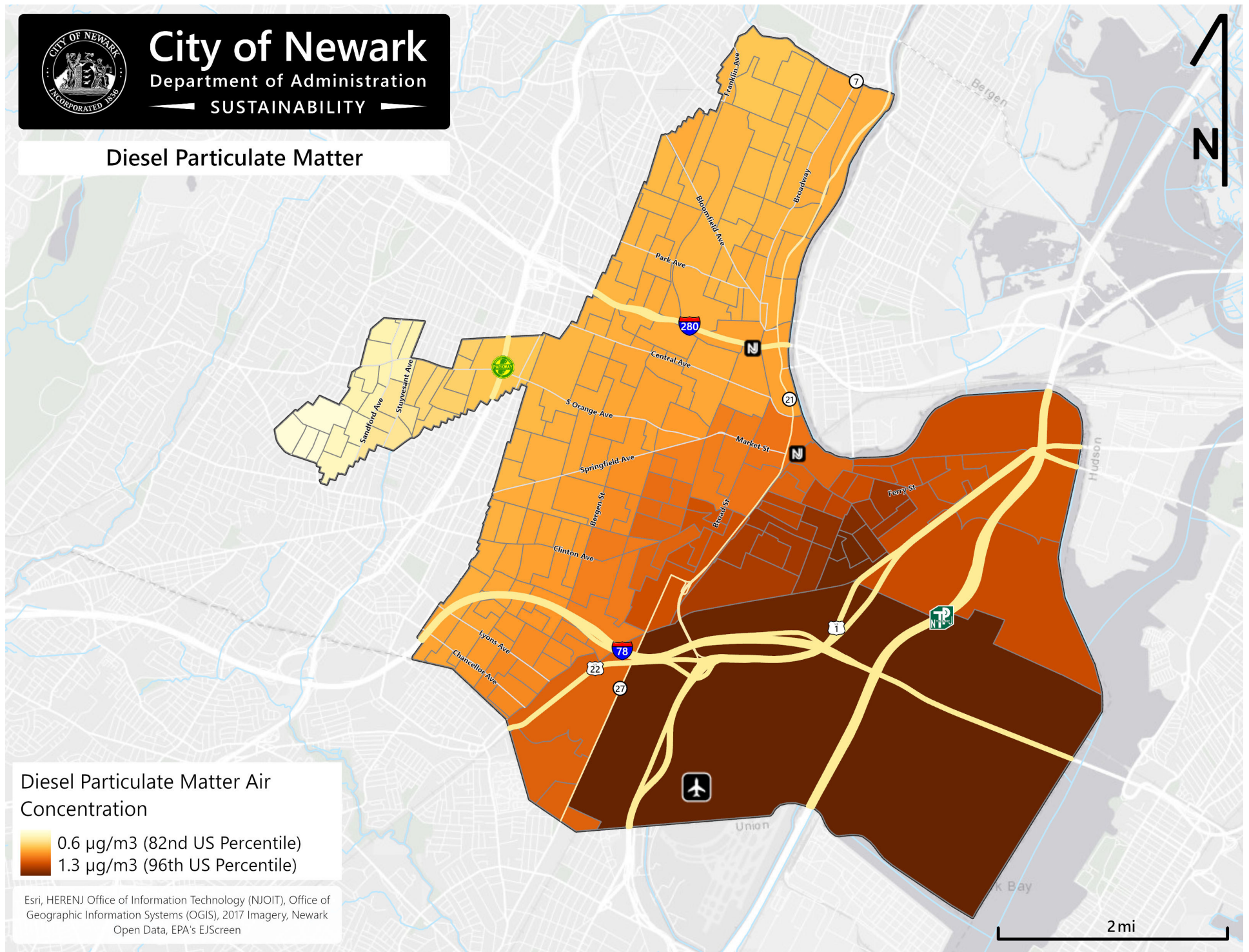




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Diesel Particulate Matter



Map 11: Diesel Particulate Matter

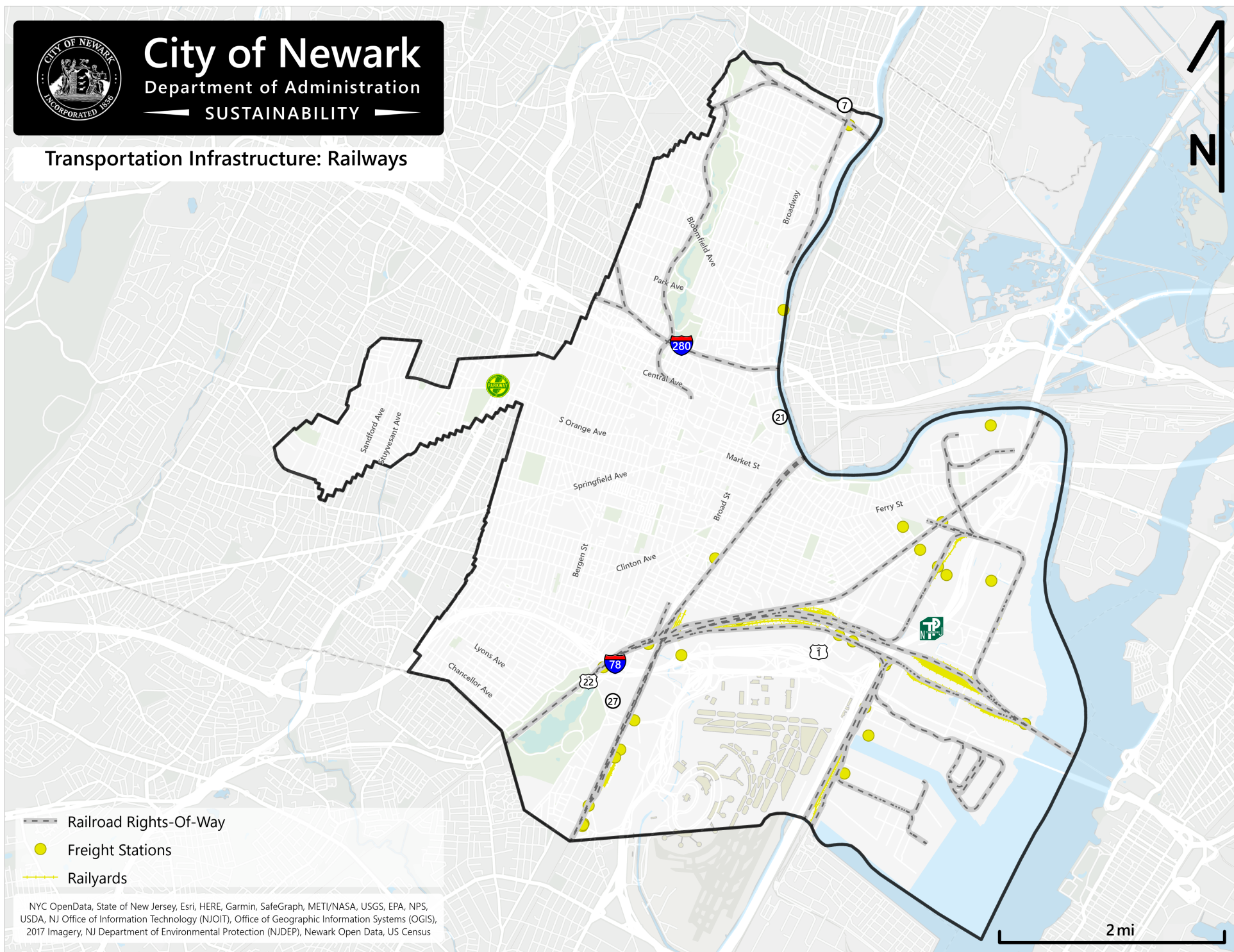


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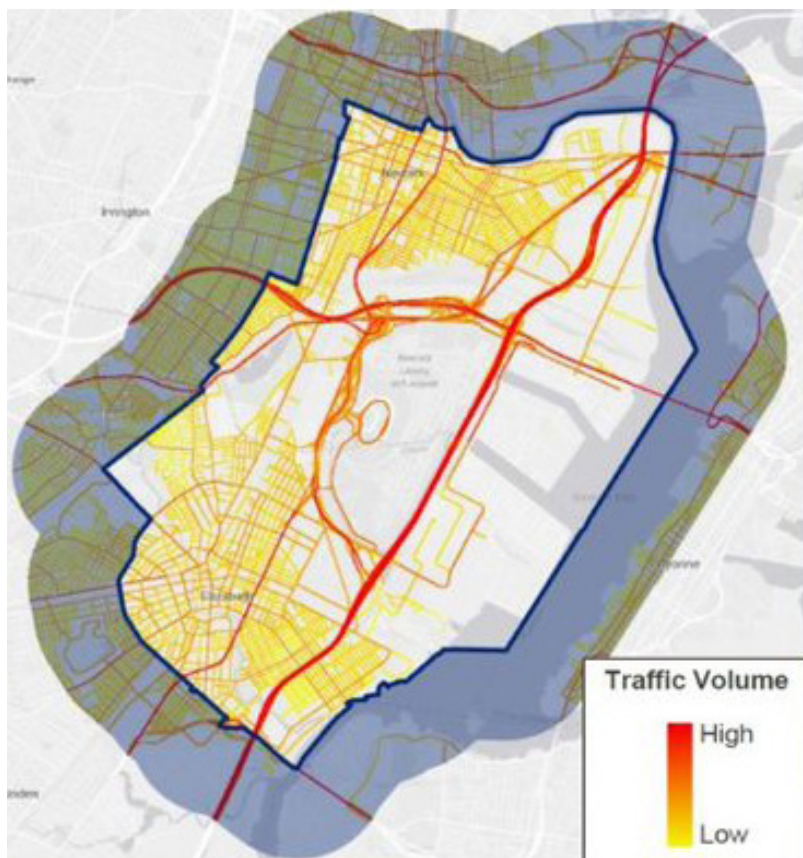
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Transportation Infrastructure: Railways



Roadway Mobile Emission Sources



Included Vehicles

Light-duty vehicles

- Motorcycle
- Passenger car
- Light-duty truck

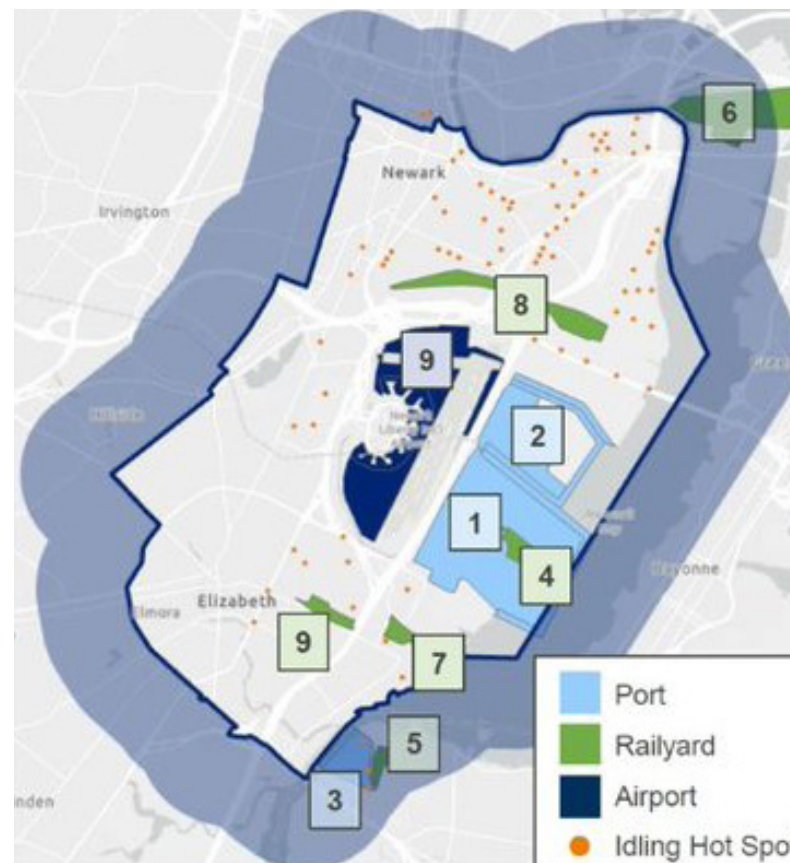
Medium-/Heavy-duty vehicles

- Single-unit truck
- Combination Truck

Buses

- School bus
- Intercity bus
- NJ Transit Bus (NJ Transit-designated routes only)

Non-Roadway Mobile Emission Sources



Included Areas & Locations

Port¹

1. Port Elizabeth
2. Port Newark
3. Howland Hook

Railyard²

4. ExpressRail Elizabeth
5. ExpressRail Staten Island
6. South Kearny
7. NS E-Rail
8. Oak Island
9. Trumbull

Airport³

10. Newark International Airport

Heavy-duty diesel truck idling

- Identified hotspots

Emission Sources

¹ Cargo handling equipment, commercial marine vessels, & on-port heavy-duty diesel vehicles

² Switch & line-haul locomotives

³ Ground support equipment & auxiliary power units

Figure 5: Roadway and Non-Roadway Mobile Emissions Sources

Adapted from (M.J. Bradley & Associates, 2020)



2B: WATER QUALITY

COMBINED SEWER OVERFLOWS (CSO)

Drainage districts represent the area of the City where water drains to a particular outfall. Since Newark has a combined sewer system, the outfalls have special CSO permits; there are 12 permitted CSO outfalls along the Passaic River and 5 permitted CSO outfalls on the Peripheral Ditch along the perimeter of Newark International Airport (Map 13). Combined sewer overflows (CSOs) contain not only stormwater but also untreated human and industrial waste, toxic materials, and debris. Newark holds the General Permit for these CSO outfalls under the NJDEP's regulations (Newark Water and Sewer, 2020).

The City of Newark has been working closely with PVSC and seven other municipalities with CSSs within the PVSC Service District (including the City of Bayonne, Town of Kearny, Town of Harrison, Borough of East Newark, Jersey City Municipal Authority, City of Paterson, and the North Bergen Municipal Utilities Authority) on the development of a regional Long Term Control Plan for treating CSOs. More information, including Long Term Control Plan submissions, can be found at <https://www.nj.gov/dep/dwq/cso-longtermplans.htm>. Newark's sewer system was primarily

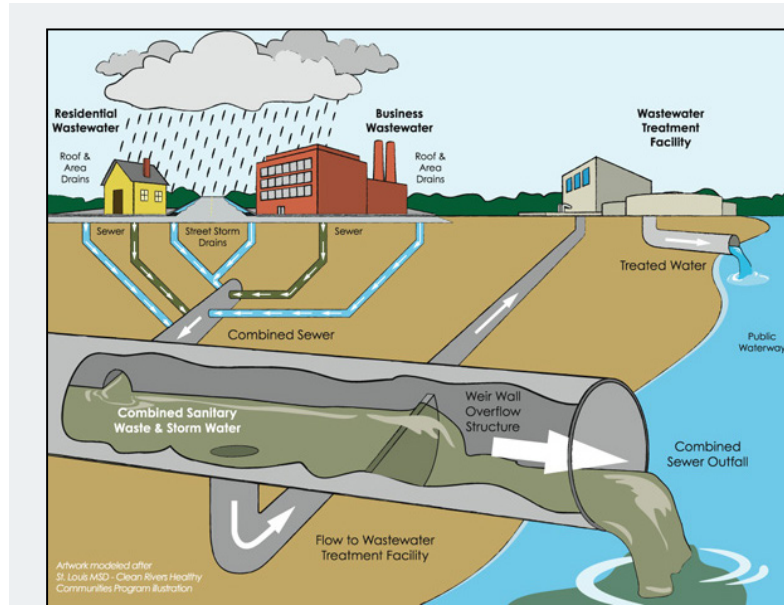


Figure 6: Combined Sewer Overflows

During storms, rainwater and melted snow travel from Newark's streets to the Passaic Valley Sewerage Commission (PVSC) wastewater treatment plant on Wilson Avenue. Stormwater runoff is carried through an underground network of sewage pipes. Approximately 11 square miles of Newark is serviced by a "combined sewer system" (CSS), designed to collect stormwater, domestic sewage, and industrial waste in the same pipe. Most of the time, the CSS transports all wastewater to the treatment plant, where it is treated before being discharged to Upper Newark Harbor. During periods of heavy rainfall, however, the volume of water traveling through the pipes can exceed the capacity of the system. In these cases, combined sewer systems are designed to overflow and discharge excess water directly into nearby streams or rivers through outfalls.

built in the 19th century, so its draft plan includes a balance of green infrastructure and gray infrastructure projects and was proposed to cost \$1.2 billion (Johnson, 2020).

PVSC is the fifth largest and one of the oldest wastewater treatment plants in the

United States, serving 1.5 million residents in the 48 municipalities throughout North Jersey. The PVSC plant receives approximately 225 million gallons of wastewater per day which is subsequently treated before being discharged into Upper New York Harbor.



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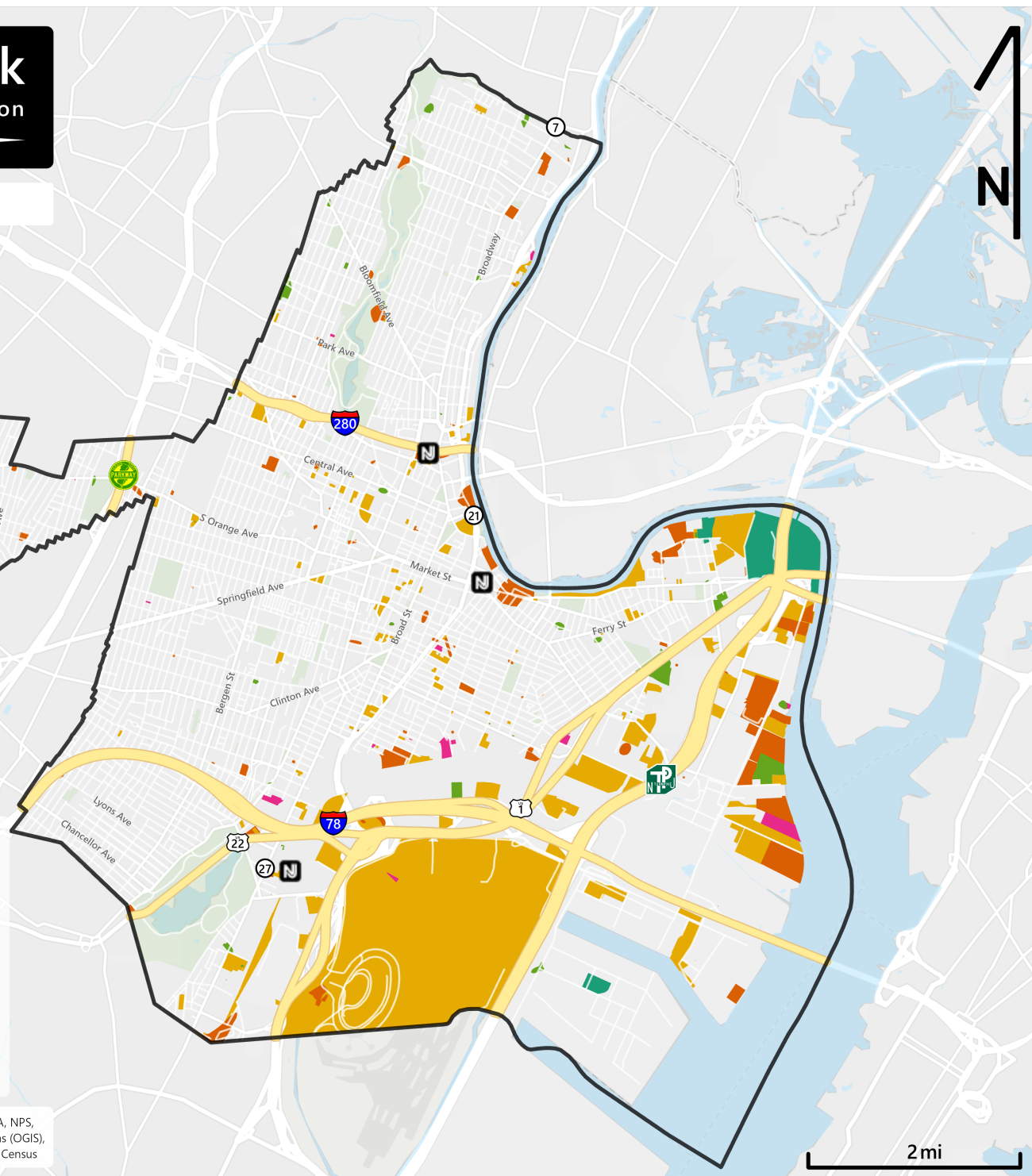
Ground Water Contamination

Ground Water Contamination: Classification Exception Areas (CEA)

Program Administered Under

- DEP (NJDEP Traditional Case Oversight)
- LSRP (Licensed Site Remediation Professional)
- POST (Post NFA Monitoring)
- RAP (Ground Water Remedial Action Permit)
- VIC (Virtual Institutional Control)

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



GROUNDWATER CONTAMINATION

Ground Water Classification Exception Areas (CEAs) are identified by the NJDEP as part of developing a “remedial action plan.” A remedial action plan is a work plan for cleaning up a site to a suitable level based on the intended land use in areas where groundwater does not, or is not expected to, meet ambient groundwater quality standards (New Jersey Department of Environmental Protection, 1998). In other words, CEAs indicate areas where either the natural groundwater quality or the localized effects of a permitted discharge render an area unsuitable for use as an aquifer.

There are 299 CEAs in Newark active in 2020, shown in Map 14. CEAs are administered under several programs: Licensed Site Remediation Professional, Ground Water Remedial Action Permit, NJDEP Traditional Case Oversight, Post NFA (No Further Action) monitoring, and Virtual Institutional Control. CEA permits remain in effect for five years, during which all aquifer uses in the area are stopped (NJDEP, 1998). By the end of the 5-year permit, the agreed upon water quality standards must be met before the primary uses of the aquifer can be restored.

On the following pages: NJPDES Permits

SURFACE WATER DISCHARGE SITES (MAP 15)

Beyond CSO outfall pipes, there are several private discharge pipes in Newark. Owners of these outfalls are required to hold a permit through the New Jersey Pollutant Discharge Elimination System (NJPDES) program. NJPDES is run through NJDEP to “protect New Jersey’s ground and surface water quality by assuring the proper treatment and discharge of wastewater (and its residuals) and stormwater from diverse types of facilities and activities”. Permits are issued to limit the amount or concentration of pollutants into waterways. Regulated facilities can range from small users—such as campgrounds, schools, and shopping centers—to larger industrial and municipal wastewater dischargers (New Jersey Department of Environmental Protection, 2019b).

NJPDES REGULATED FACILITIES (MAP 16)

The NJDEP’s Bureau of Nonpoint Pollution Control regulates facility permits that fall under NJPDES, which aims to protect environmental and public health as it pertains to waterways in the state (NJDEP, 2019b). The program is an attempt to promote compliance among permitted facilities and address significant problems related to discharge. NJPDES permits are issued by the NJDEP and are authorized according to a specific set of rules governing discharges within the state of New Jersey. There are 102 facilities in Newark that have NJPDES permits active in 2020, shown in Map 16.

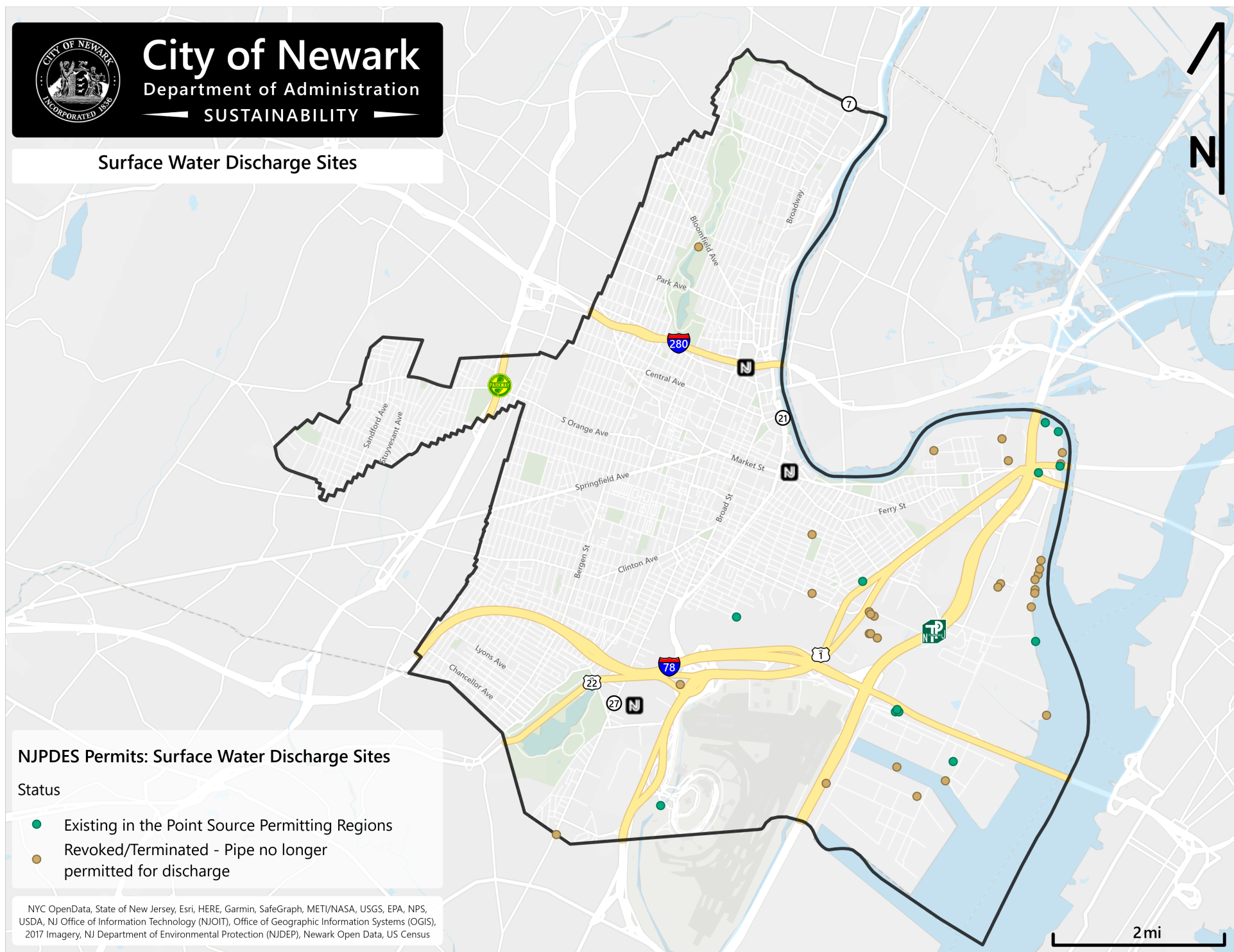


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SUSTAINABILITY

Surface Water Discharge Sites





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Department of Administration

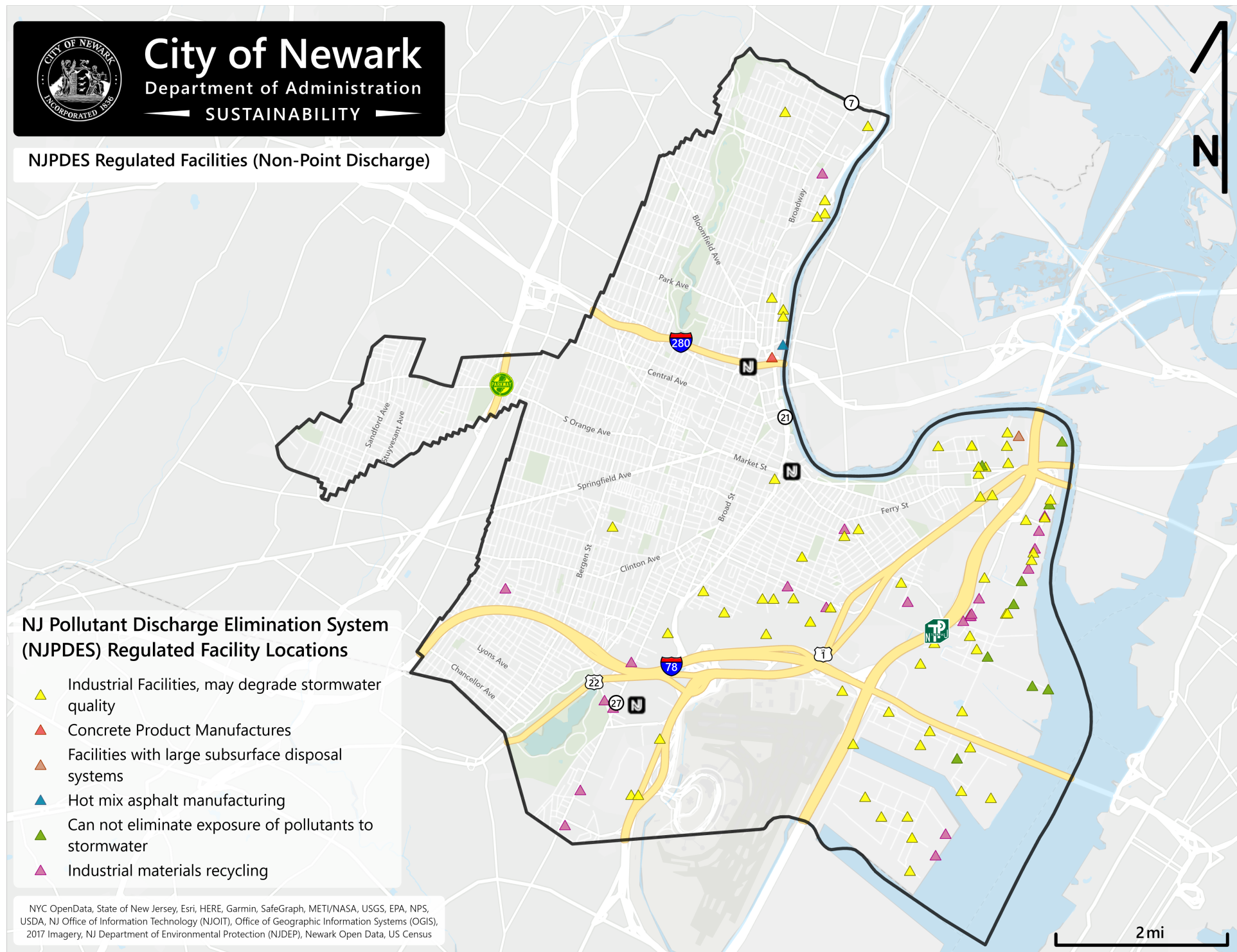
SUSTAINABILITY

NJPDES Regulated Facilities (Non-Point Discharge)

NJ Pollutant Discharge Elimination System (NJPDES) Regulated Facility Locations

- ▲ Industrial Facilities, may degrade stormwater quality
- ▲ Concrete Product Manufactures
- ▲ Facilities with large subsurface disposal systems
- ▲ Hot mix asphalt manufacturing
- ▲ Can not eliminate exposure of pollutants to stormwater
- ▲ Industrial materials recycling

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



Map 16: NJPDES Regulated Facilities

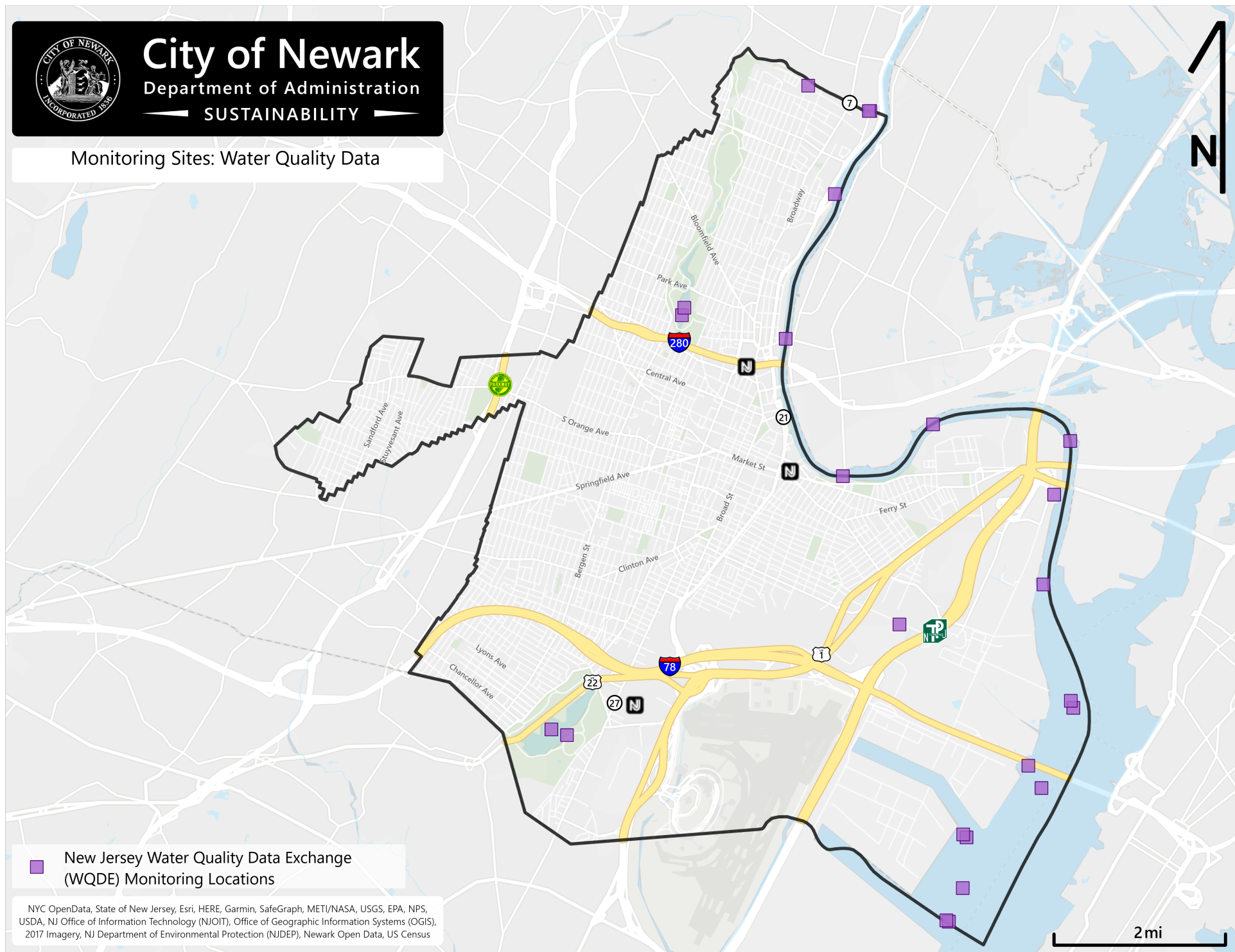


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SUSTAINABILITY

Monitoring Sites: Water Quality Data



WATER QUALITY MONITORING

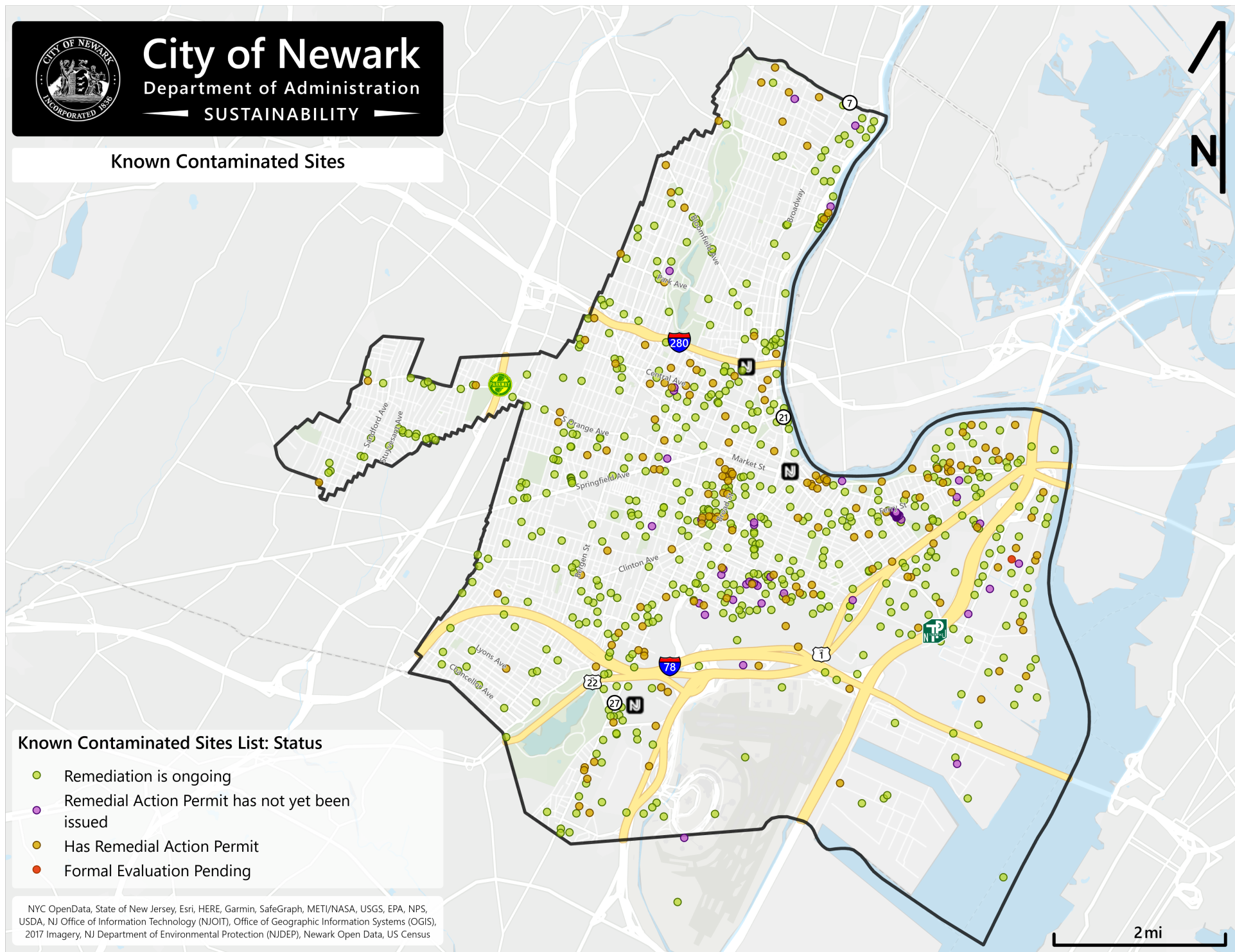
The New Jersey Water Quality Data Exchange System is managed by NJDEP to receive, integrate, and disseminate ambient water quality data generated from multiple sources across the state (New Jersey Department of Environmental Protection, 2020a). Data submitted by sources including the Agricultural Research Service and the United States Geological Survey to the Water Quality Data Exchange System is sent to the EPA for including in the National Water Quality Monitoring Council's Water Quality Portal. Data from the [Water Quality Portal](#) is then used by NJDEP to develop NJ's Integrated Water Quality Assessment Report.



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SUSTAINABILITY

Known Contaminated Sites



2D: SOIL QUALITY

KNOWN CONTAMINATED SITES

New Jersey passed the Site Remediation Reform Act in 2009, which designates Licensed Site Remediation Professionals (LSRPs) to manage the cleanup of contaminated sites. The NJDEP Site Remediation Program maintains a database on their website called the Known Contaminated Sites List.

In New Jersey, Known Contaminated Sites are non-homeowner sites and properties where soil or ground water contamination is equal to or greater than applicable standards (New Jersey Department of Environmental Protection, 2020b). KCSs include businesses such as factories, gas stations, and dry cleaners. In some cases, site remediation has been completed. In other cases, remediation activities are currently under way or require remediation but the work has not yet started. There are currently 777 KCSs in Newark shown on Map 18. The sites in this dataset include a variety of regulatory programs administered by the NJDEP and the USEPA. As such, some sites included in this map are also captured in subsequent maps (e.g., Brownfield Sites and Superfund Sites).

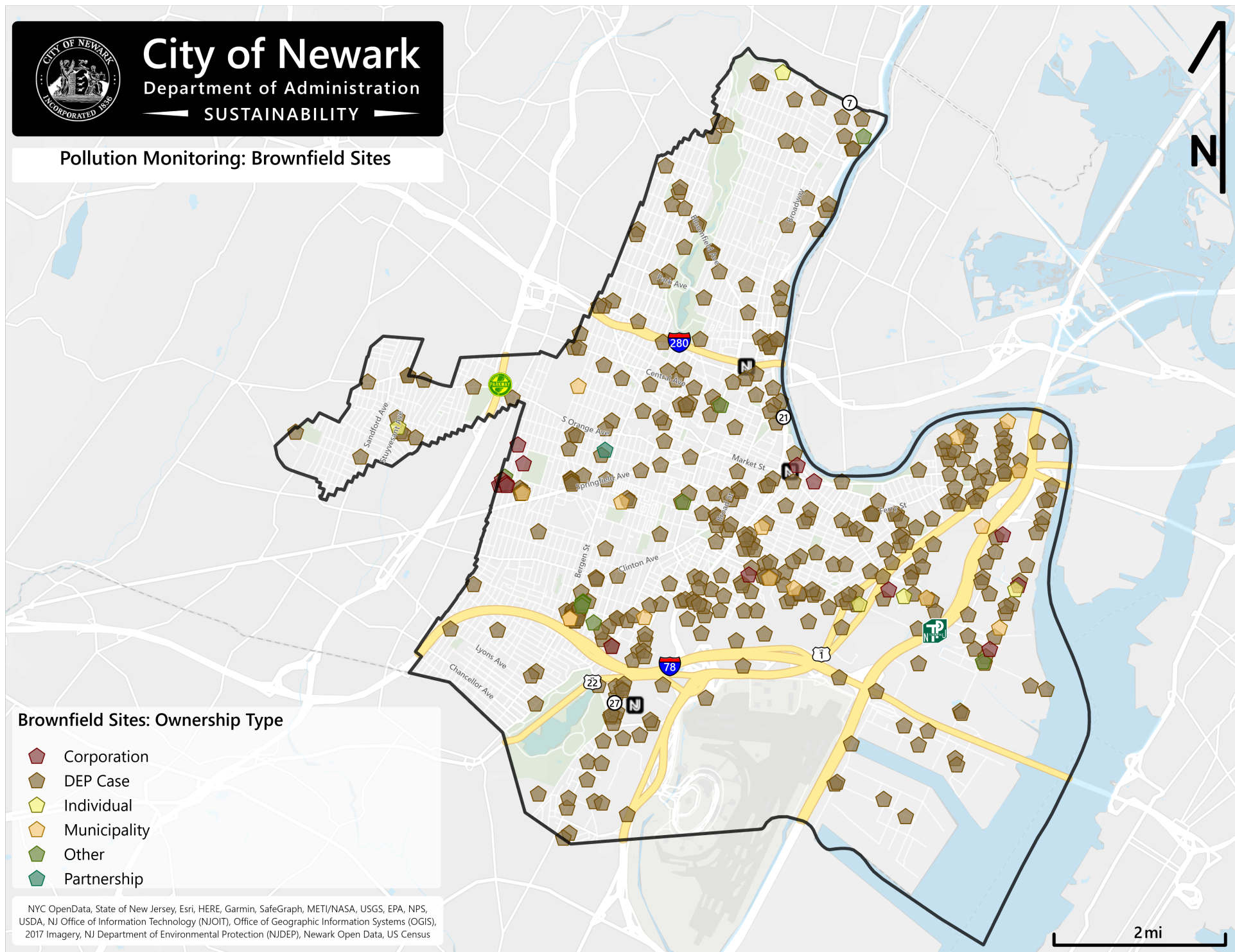


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SUSTAINABILITY

Pollution Monitoring: Brownfield Sites



BROWNFIELD SITES

Brownfields are defined as “any former or current commercial or industrial site, currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant” (New Jersey Department of Environmental Protection, 2020c). NJDEP works with communities to design and implement remediation and reuse plans for brownfield sites. There are 444 brownfield sites in Newark.

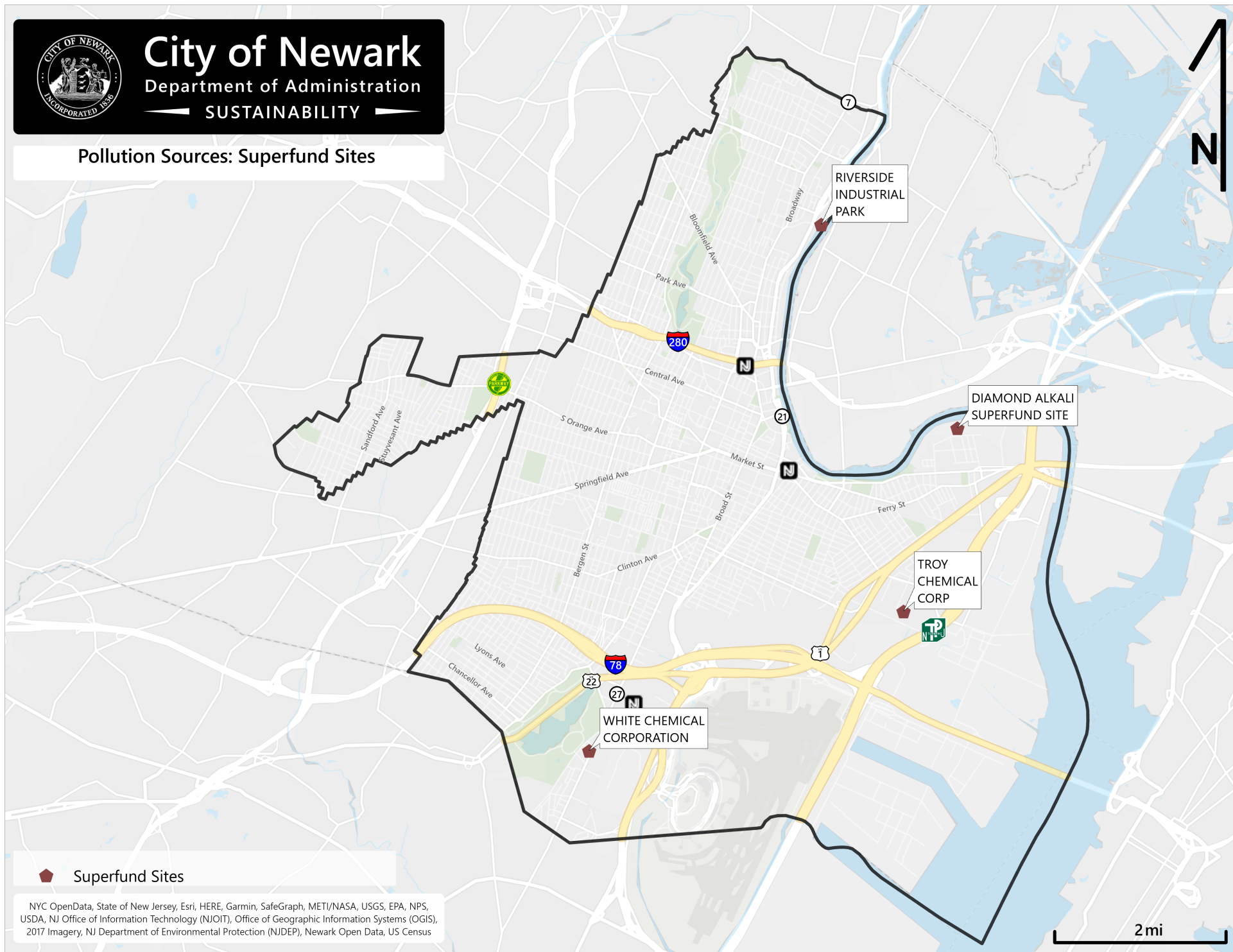


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SUSTAINABILITY

Pollution Sources: Superfund Sites



SUPERFUND SITES

The EPA's Superfund program authorizes the EPA to clean up contaminated areas resulting from the mismanagement of hazardous waste (USEPA, 2020c). Superfund sites include manufacturing facilities, processing plants, landfills, and mining sites. The Superfund program is part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) established by Congress in 1980. CERCLA was passed in response to environmental advocacy surrounding high profile public and environmental health issues posed by contaminated sites. In New Jersey, the Superfund program is administered by the EPA in cooperation with NJDEP. Out of 104 Superfund sites on the National Priority List (NPL; i.e., the list that specifies 1,327 Superfund sites of national priority for releases of hazardous substances) in New Jersey (the most for any state in the nation), four are in Newark (Map 20); there are 33 additional Superfund sites not on the National Priority list.

The Riverside Industrial Park superfund site property was used for manufacturing paint, resins, linseed oil, and varnish throughout the 1900s; since then, the property has been used for chemical

and cosmetics manufacturing. In 2009, an oil spill into the Passaic River was reported near the site. Upon further investigation, the EPA identified several large abandoned underground and above-ground storage tanks containing hazardous wastes along with hazardous liquid and sludge in basements of vacant buildings. The site was added to the NPL in 2013, and it is still undergoing remediation for the soil and groundwater contamination with volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) (USEPA, 2020d).

The Diamond Alkali superfund site has been a property where dichloro-diphenyl-trichloroethane (DDT) and other agricultural chemicals including the herbicides used in "Agent Orange" were manufactured in the 1940s-70s. In 1983, sampling by the state of New Jersey and the EPA at the site and in sediment from the river bottom revealed elevated levels of dioxin. In 1984 the site was also added to the NPL. To this day, site remediation is ongoing for dioxin, pesticides, and other hazardous substances in the soil and groundwater and dioxin, pesticides, PCBs,

metals, polycyclic aromatic hydrocarbons (PAHs) in sediment in the Passaic River. Additional information can be found at <http://www.ourpassaic.org/>.

The Troy Chemical Corp superfund site consists of several sources of contamination to Pierson's Creek, which flows into the Newark Bay, including the Troy Chemical Corporation facility which manufactures antimicrobial and antifungal paint additives which has been operating since 1956, along with mercury compound manufacturing in 1957-1987, and previously other industries dating back to the late 1800s. The site was added to the NPL in 2016 and remediation is ongoing for mercury contamination of soil and water.

The White Chemical Corp. Superfund site is currently a vacant lot but was used in the 1970s-1980s for manufacturing of acid chlorides and fire-retardant compounds. The site was added to the NPL in 1991 and has since had on-site hazardous materials, containers, above ground storage tanks, and soils removed; and groundwater remediation and monitoring is ongoing (USEPA, 2020d).



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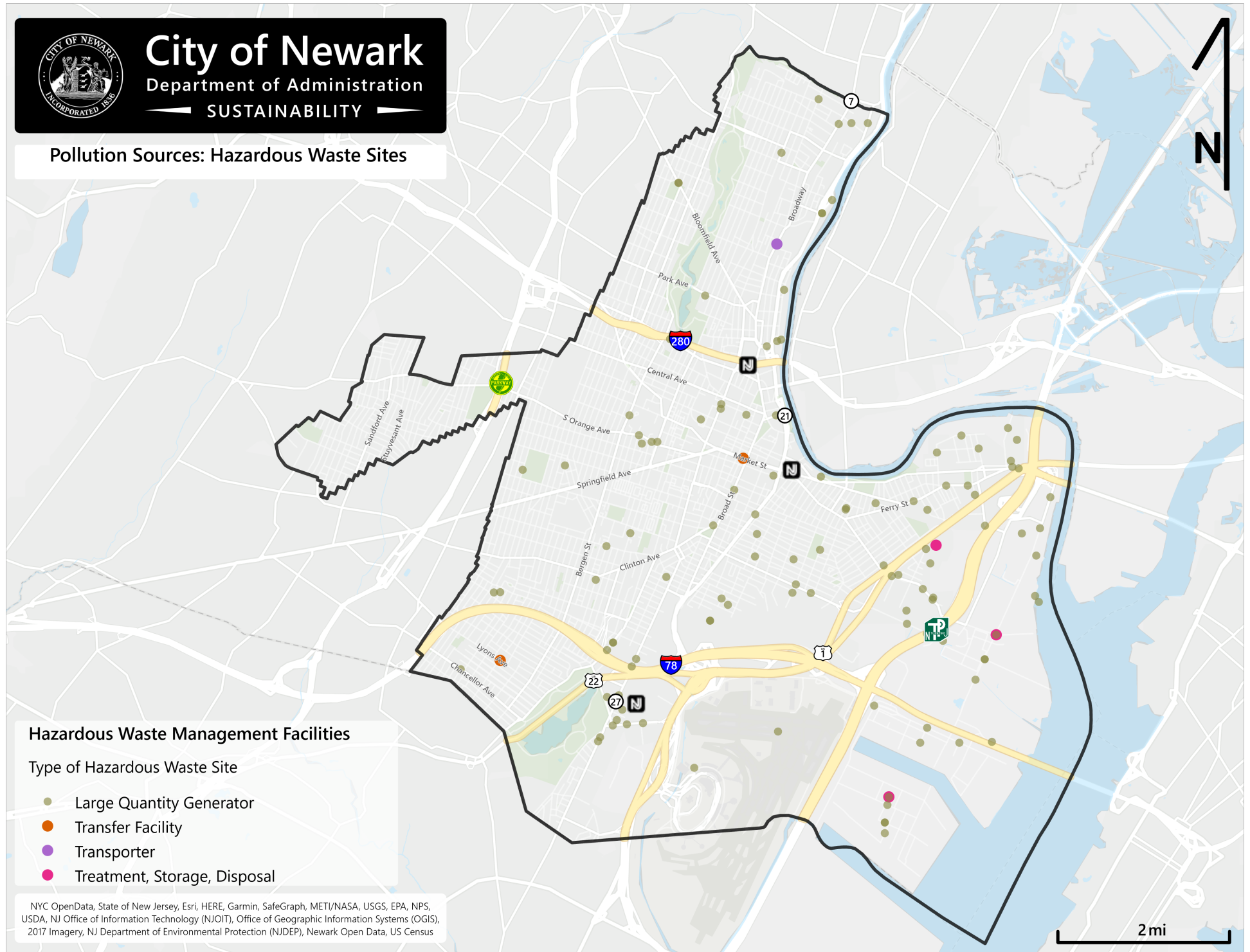
Pollution Sources: Hazardous Waste Sites

Hazardous Waste Management Facilities

Type of Hazardous Waste Site

- Large Quantity Generator
- Transfer Facility
- Transporter
- Treatment, Storage, Disposal

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



2D: HAZARDOUS WASTE SITES

HAZARDOUS WASTE SITES

Regulated by the EPA under the Resource Conservation and Recovery Act (RCRA), hazardous waste management facilities receive hazardous wastes for treatment, storage, or disposal (USEPA, 2015). RCRA authorizes the EPA to control hazardous waste including generation, transportation, treatment, storage, and disposal. There are currently 1,265 facilities in Newark with RCRA permits. The locations of facilities with RCRA permits are in Map 21 (Bocse, 2015).






City of Newark

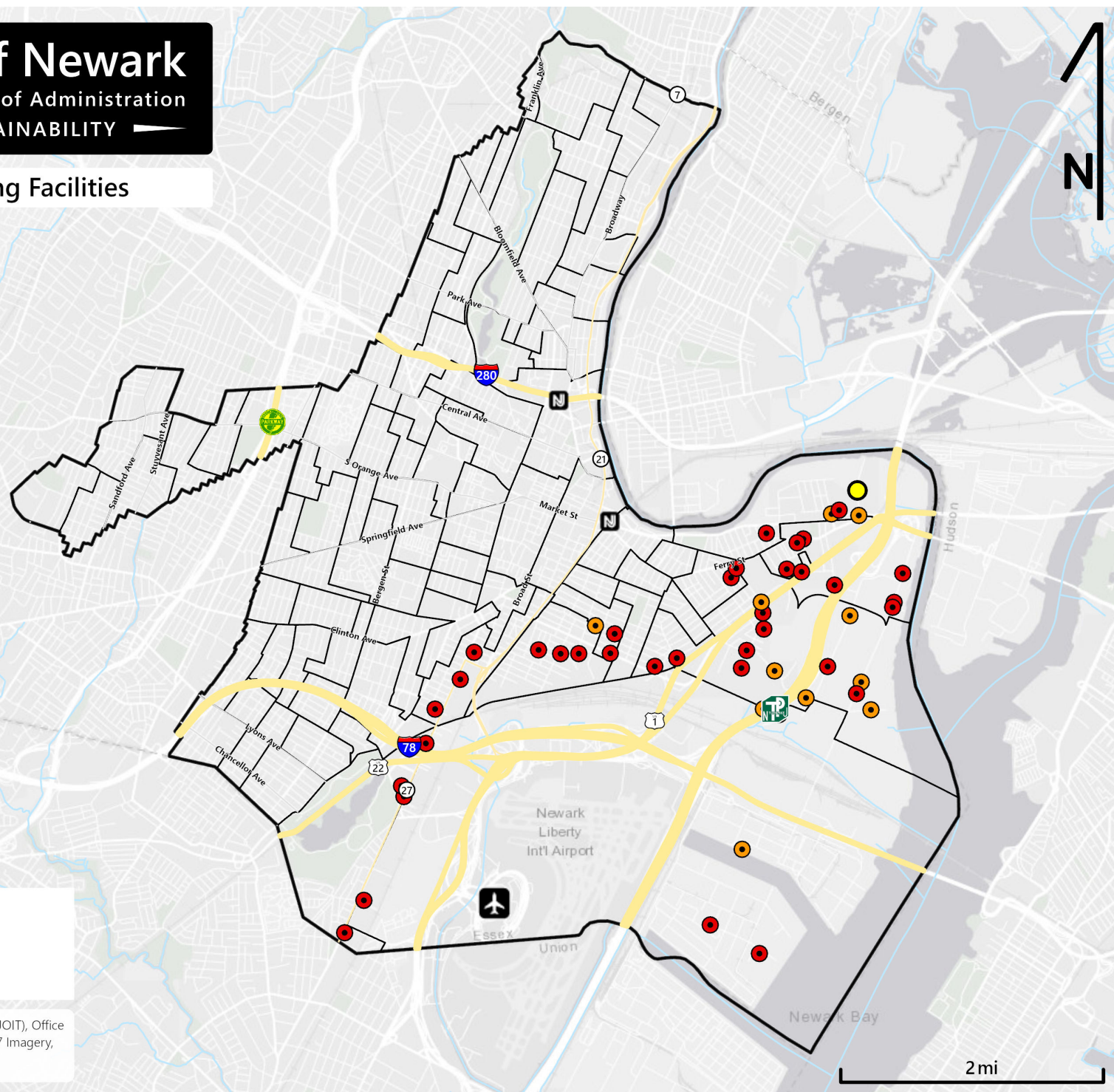
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SUSTAINABILITY

Waste & Recycling Facilities

Facility Type

-  Recycling facility
-  Waste facility
-  Waste-to-energy incinerator

Esri, HEREJ Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, NRDC, ICC



WASTE AND RECYCLING FACILITIES

In addition to hazardous waste, Newark has many facilities to manage other types of waste including but not limited to municipal solid waste, scrap metal, and demolition debris. Facilities that handle this waste, whether it be via processing it for transfer to a landfill, recycling, or other management strategies generate both mobile and stationary sources of pollution. As such, there are various issues elevated by community-based groups related to on-site debris plumes, and high traffic generated from heavy-duty vehicles traveling through residential streets and neighborhoods.

Map 22 provides a compilation of waste management sector facilities identified by East Ward residents and staff of the Ironbound Community Corporation with support from the Natural Resources Defense Council using includes information sourced from several USEPA databases (July 2019); the Office of Sustainability identified additional waste sector facilities located in South and Central Wards included in this map.





PART 2: CLIMATE AND BUILT ENVIRONMENT

"We learned from Superstorm Sandy that every part of Newark was vulnerable to flooding, extreme weather and climate change. Working together, we can make Newark more resilient and prevent local street flooding."



CHAPTER 3: CLIMATE & WEATHER

Climate is a major factor in determining types of plants, animals, and ecosystems found in any given place. Newark's geographic location is halfway between the Equator and North Pole on the eastern coast of the United States. This global positioning results in highly variable daily weather influenced by wet, dry, hot, and cold airstreams. Newark experiences cold winters and warm, humid summers, as influenced by an air flow dynamic that is dominant across the region, known as the "prevailing westerlies." These air currents bring air flow from west to east and can shift north and south, varying in strength throughout the year (Rutgers University, 2016).

New Jersey's Extreme Temperature and Precipitation Months

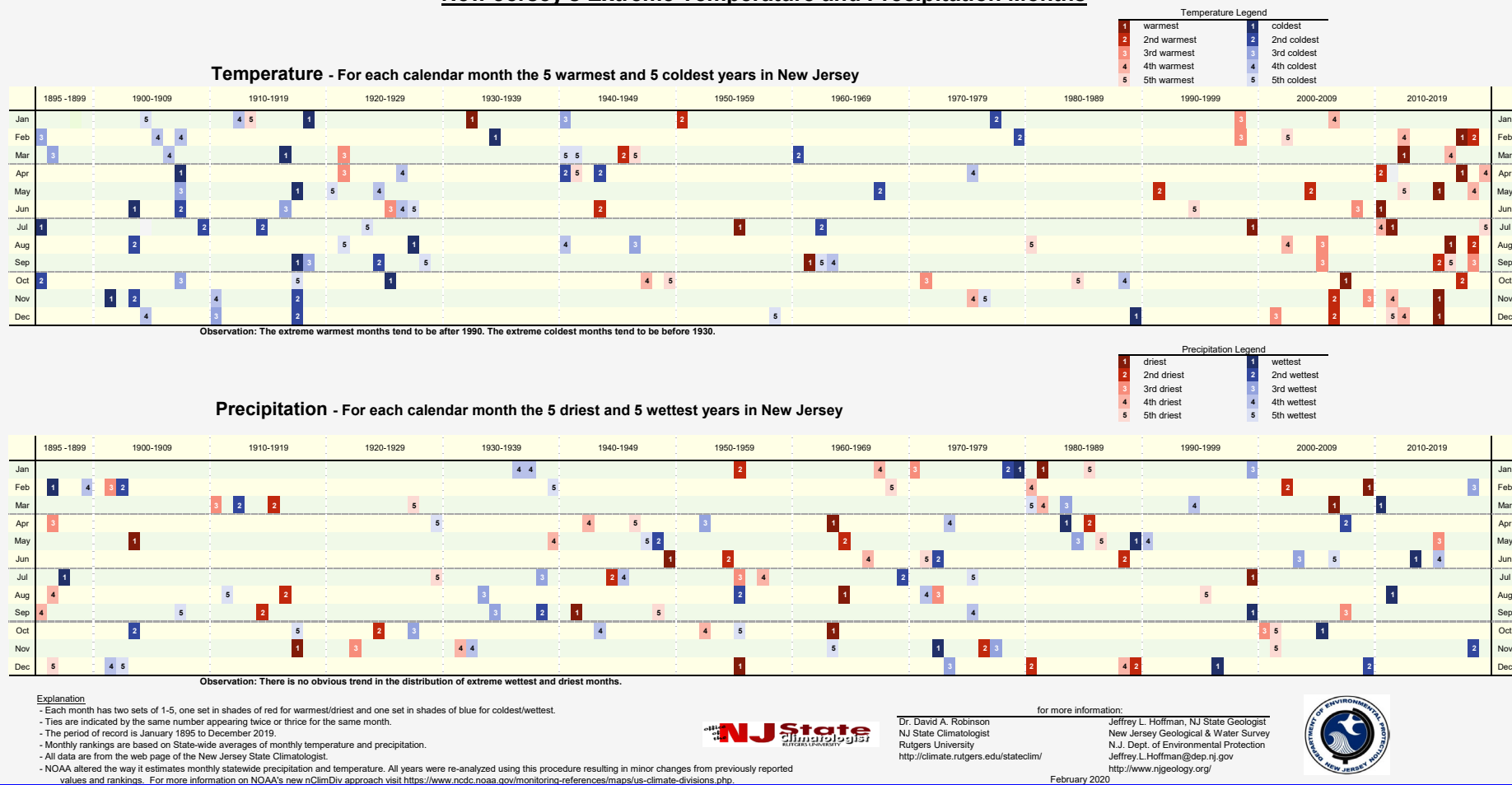


Figure 7: New Jersey Monthly Extremes

3A: TEMPERATURE & PRECIPITATION

AVERAGE TEMPERATURE & PRECIPITATION

The National Weather Service records temperature observations and other data throughout the year from a weather station at the Newark Liberty International Airport. According to data collected by the National Weather Service between 1929 and 2020, the mean annual temperature in Newark is 63.2 degrees Fahrenheit. January is the coldest month with an average temperature of 31.3 degrees. July is the hottest month, with an average temperature of 77.2 degrees (National Weather Service, 2020). As a result of climate change, Newark is getting warmer (Figure 7).

According to data collected by the National Weather Service between 1893 and 2020, the mean annual precipitation in Newark is 58.6 inches. Most precipitation in the City falls as rain, while snow is common in January-March with an average 26 inches of snow, annually. Snow is included in the total annual inches of precipitation, but as the equivalent of inches of rain where a foot of snow is equivalent to roughly one inch of rain). July is the wettest month with an average precipitation of 4.8 inches. February is the driest month

with an average precipitation of 2.9 inches (National Weather Service, 2020). Changes in precipitation due to climate change are not yet evident as of 2020 (Figure 7).

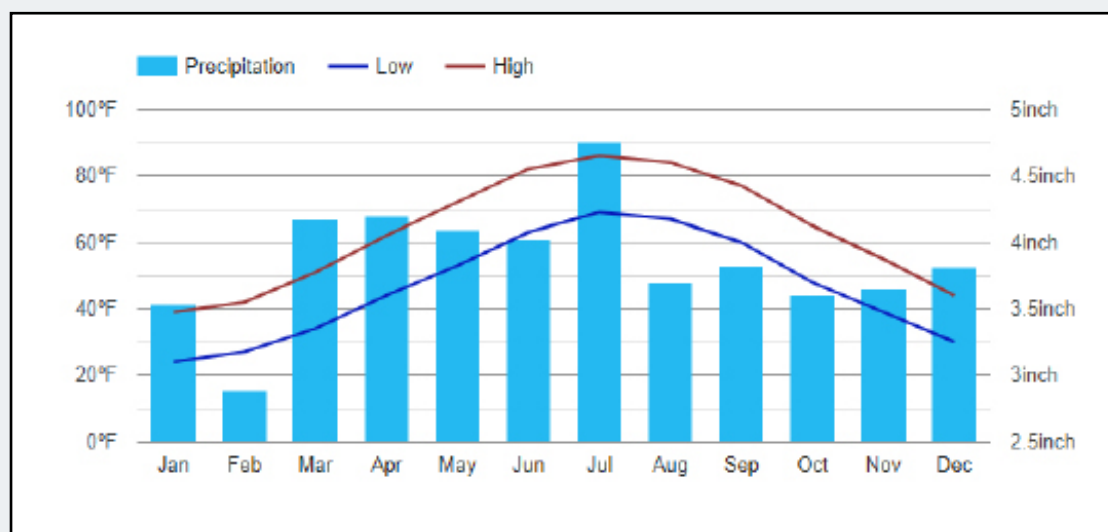


Figure 8: Average Monthly Temperature and Precipitation

January is the coldest month with an average temperature of 31.3 degrees and July is the hottest month, with an average temperature of 77.2 degrees (National Weather Service, 2020). July is the wettest month with an average precipitation of 4.8 inches, and February is the driest month with an average precipitation of 2.9 inches (National Weather Service, 2020).

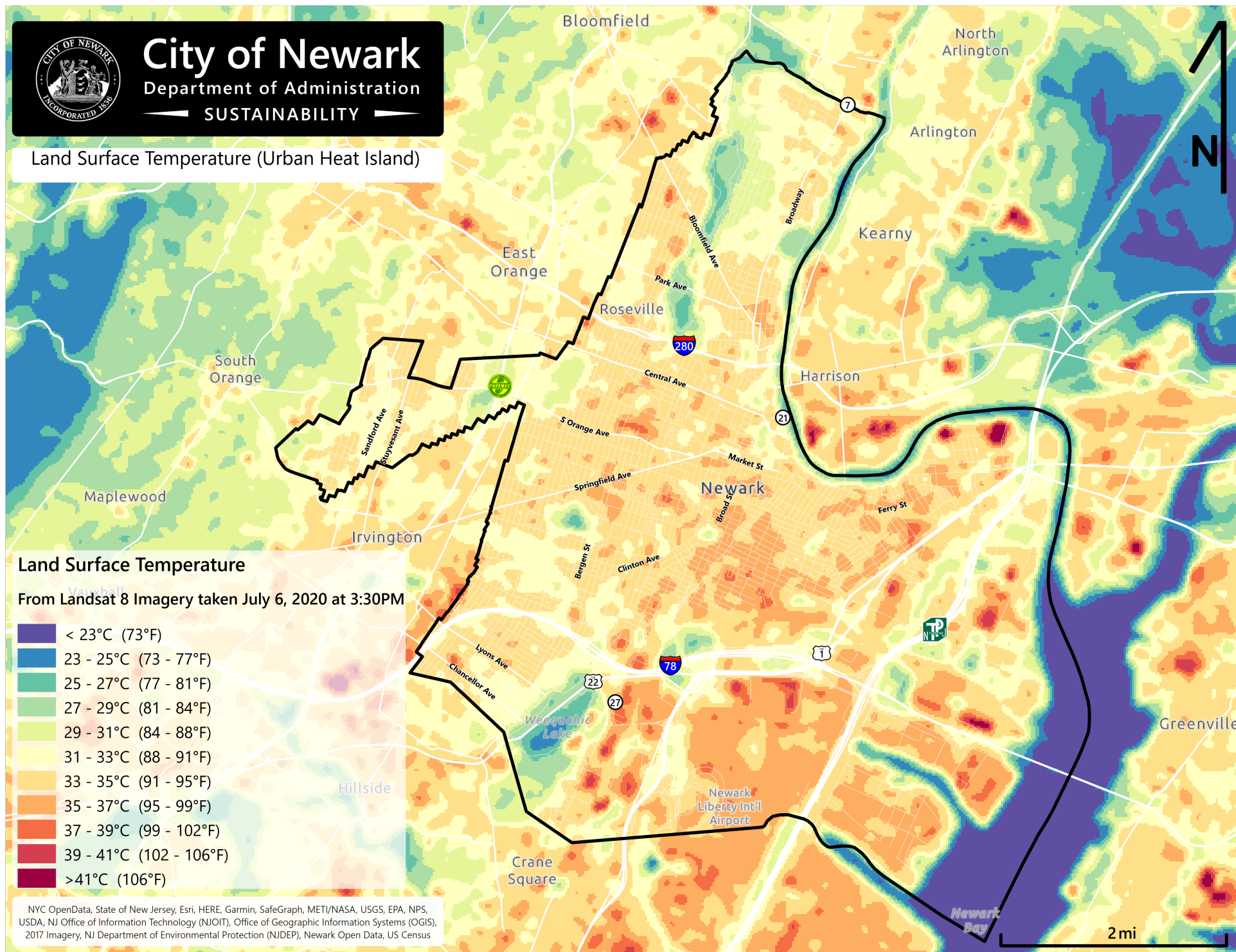


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SUSTAINABILITY

Land Surface Temperature (Urban Heat Island)



URBAN HEAT ISLAND EFFECT

The “Urban Heat Island” effect describes the trend whereby urbanized areas experience higher temperatures than outlying, non-urban areas (USEPA, 2014). Dark, impervious structures like roads, roofs, and parking areas absorb and re-emit heat from the sun more than natural landscapes like forests and water bodies. Urban areas, where these structures are highly concentrated and greenery is limited, become “islands” of higher temperatures relative to outlying areas (Baltimore Sun, 2014). This leads to increased electricity usage for cooling and heat-related health issues, particularly for sensitive populations.

Urban heat island effect is measured through land surface temperature, which represents how hot the surface of the earth is. Land surface temperature is calculated using satellite imagery. While Map 23 gives a helpful snapshot view of land surface temperature (i.e., the data represented are from a single time on a single day), in order to understand true urban heat islands in Newark and their impacts on health, it is critical to understand where heat persists, the differences between daytime and nighttime temperatures, and other spatial

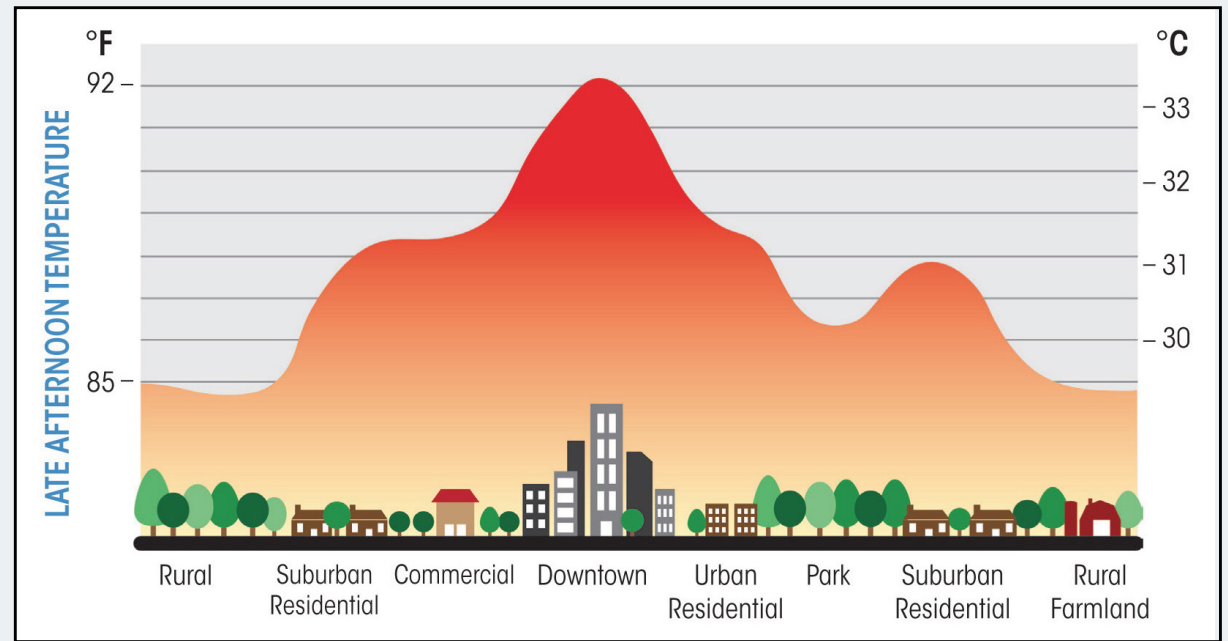


Figure 9: Urban Heat Island Effect

Interventions to address urban heat island effect include “green infrastructure” strategies like greening with trees and vegetation, using cool construction and pavement materials or coatings (such as painting dark rooftops white), and erecting shade structures. It is critical that green infrastructure interventions are built into zoning policies to encourage their implementation.

patterns, and therefore, this should not be relied upon as a definitive map for heat in Newark. In Newark, neighborhoods that generally experience the most urban heat island effect include the Ironbound, Belmont, University Heights, and Lincoln Park.

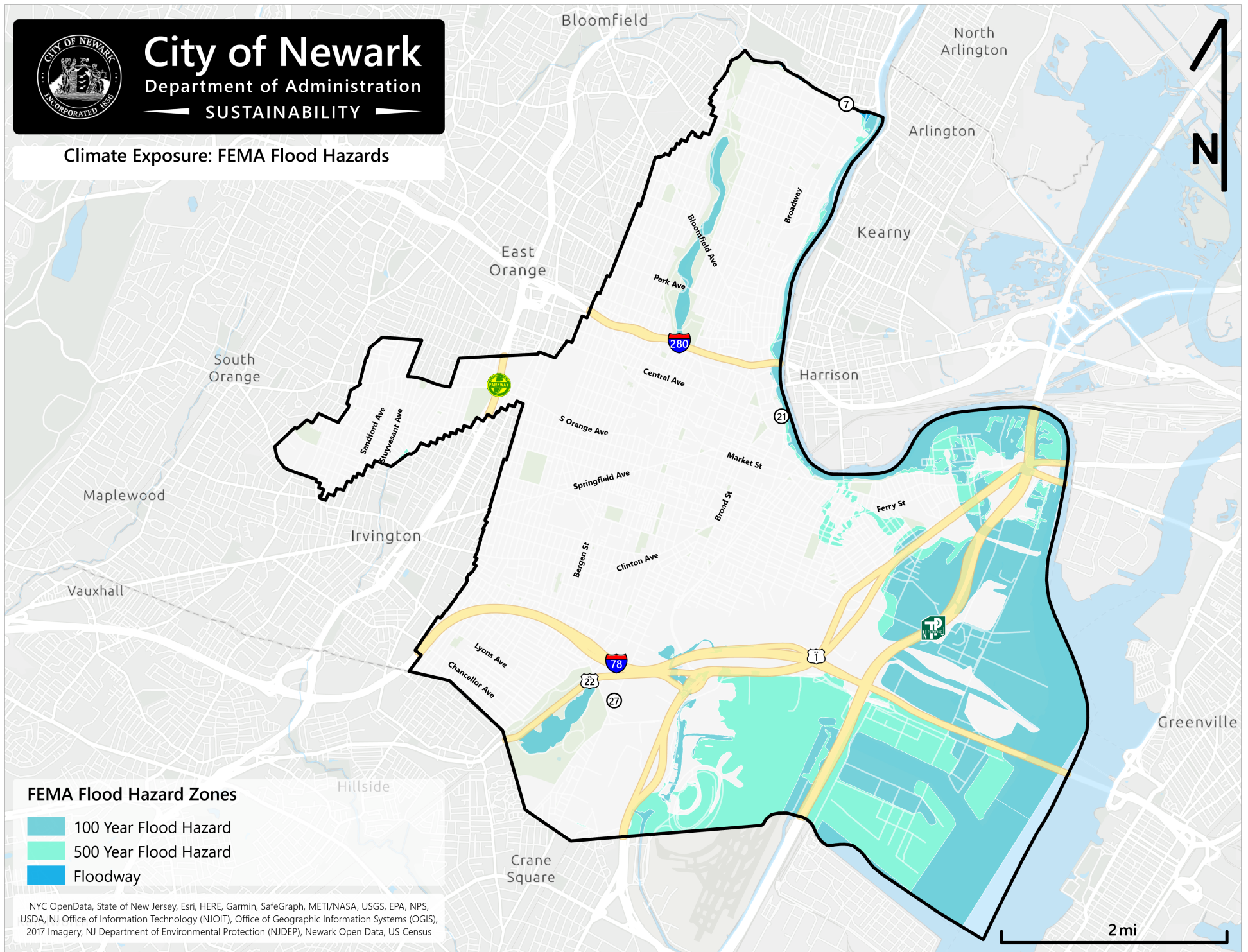


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SUSTAINABILITY

Climate Exposure: FEMA Flood Hazards



FEMA Flood Hazard Zones

- 100 Year Flood Hazard
- 500 Year Flood Hazard
- Floodway

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census

3B: FLOOD ZONES

FEMA FLOOD ZONES

The Federal Emergency Management Agency (FEMA) delineates Flood Hazard Zones in its Flood Insurance Rate Map (FIRM). Flood Hazard Zones are used to set flood insurance rates based on where flooding occurs (FEMA, 2020). Newark has a low elevation that puts much of the East Ward and parts of the South Ward at risk of flooding in either the “1% Annual Chance Flood Hazard Zone” (susceptible to “100-year” storms) or “0.2% Annual Chance Flood Hazard Zone” (susceptible to “500-year” storms). Based on these maps, about 26.5% of Newark has an elevated risk of flood exposure.

Map 24 shows FEMA Flood Hazard Zones in Newark as of 2020. It may be tempting to carefully review the boundaries of these map layers to determine the degree of risk for living, working, or developing on a given parcel using these map layers. However, it is important to note that the FIRM is intended primarily for flood insurance adjusters to calculate annual premiums and benefits coverage options for their clients. The FIRM is only meant to be used for actuarial purposes and serves as a tool to limit the amount of uncertainty surrounding heavy rain events and other sources of potential flood hazards.



Flooding in the Ironbound neighborhood.

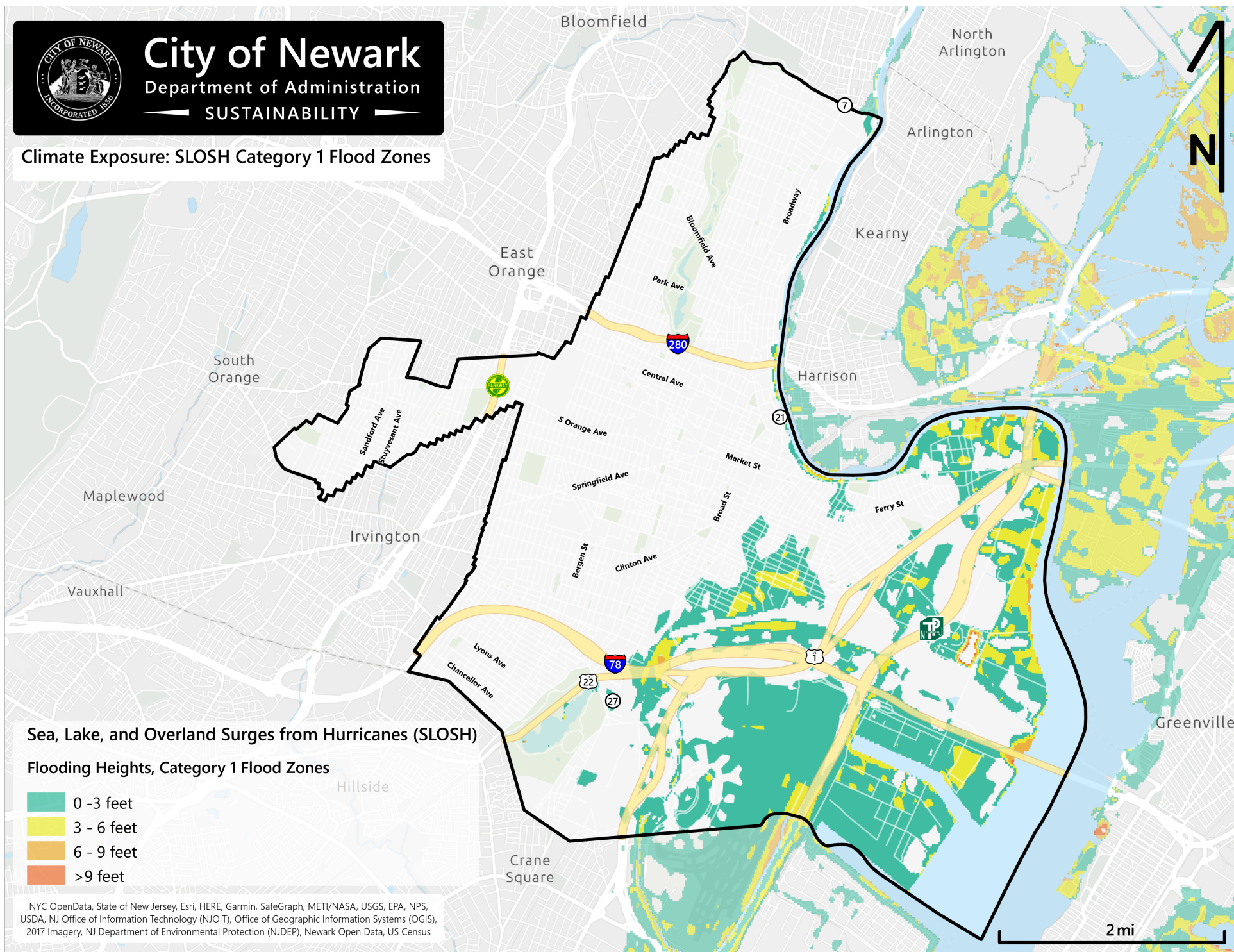


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Climate Exposure: SLOSH Category 1 Flood Zones

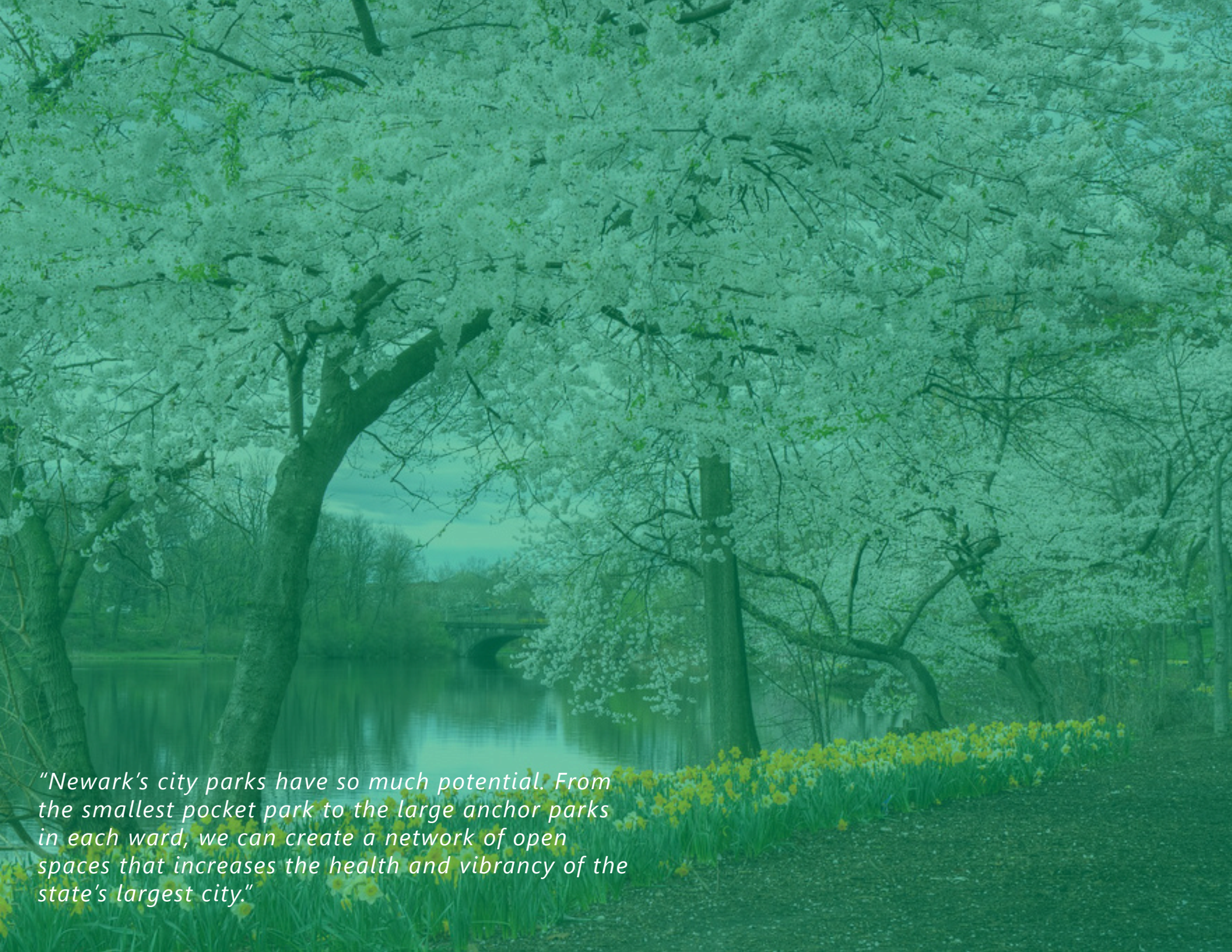


SLOSH

The National Weather Service's "Sea, Lake, and Overland Surges from Hurricanes" (SLOSH) model is used to determine hurricane evacuation areas based on storm surge heights and inundation extent. Map 25 shows storm surge heights modeled in the case of a Category 1 hurricane, incorporating factors like wind speed and angle of approach (Glahn et al., 2009). Low-lying areas of the East and South Ward are estimated to experience inundation levels of up to 6-9 feet during these severe tropical storm events.

When considering flood preparedness initiatives, many local and statewide governments have developed additional guidance materials and legislative map overlays to help residents, homeowners, home buyers, developers, and real estate professionals more effectively consider risk from coastal flooding and heavy precipitation. These guidance maps consider both historical flooding events—as is reflected in FEMA's Flood Hazard Zones mapping methodology—as well as future projections, including sea level rise, land subsidence or gradual sinking, and rainfall projections. In New Jersey,

one of the main interactive mapping tools used for understanding current and future natural hazards risks from flooding is the NJ Flood Mapper, available for viewing at www.njfloodmapper.org.

A scenic view of a park with a river, a bridge, and large trees with white blossoms. Yellow daffodils are in the foreground.

"Newark's city parks have so much potential. From the smallest pocket park to the large anchor parks in each ward, we can create a network of open spaces that increases the health and vibrancy of the state's largest city."

CHAPTER 4: BUILT ENVIRONMENT

How we design and build the communities where we live, work, and play, fundamentally impacts our health and physical, mental, social, environmental, and economic well-being. Many aspects of the built environment, including land use and transportation infrastructure, as well as access to green space, have been shown to directly or indirectly affect community health. Land use and land cover maps provide information needed to understand the current landscape of a place.

Newark is highly urbanized, resulting in a high degree of impervious surfaces (streets, buildings, parking lots and other “gray” or “black” surfaces which do not allow water to easily permeate through the ground). An estimated 70 to 80% of Newark is impervious. This can have negative implications for the city such as increased heat and stormwater runoff. Positive environmental features—such as trees, parks, and other open spaces—can help to counteract these challenges.















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— SUSTAINABILITY —

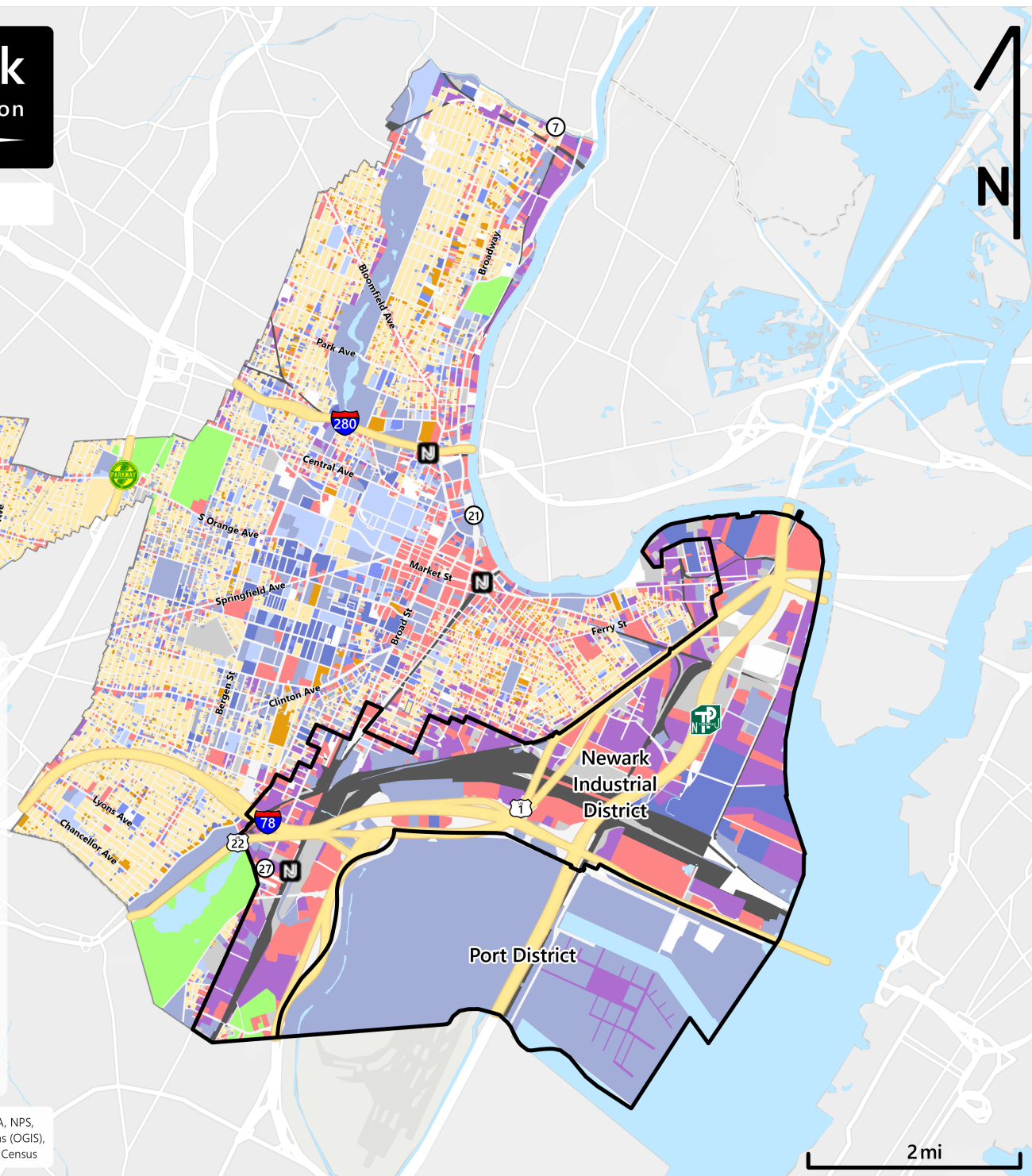
Land Use

Land Use

Based on NJ MOD-IV Property Class Designations

-  1: Vacant Property
-  2: Residential <4 units
-  4A: Commercial
-  4B: Industrial
-  4c: Apartment
-  5A/B: Railroad Class I/II
-  15A/B: Public/Other School
-  15C: Public Property
-  15D: Church & Charitable
-  15E: Cemeteries & Graveyards
-  15F: Exempt Other
-  Unclassed

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



4A: LAND USE

LAND USE

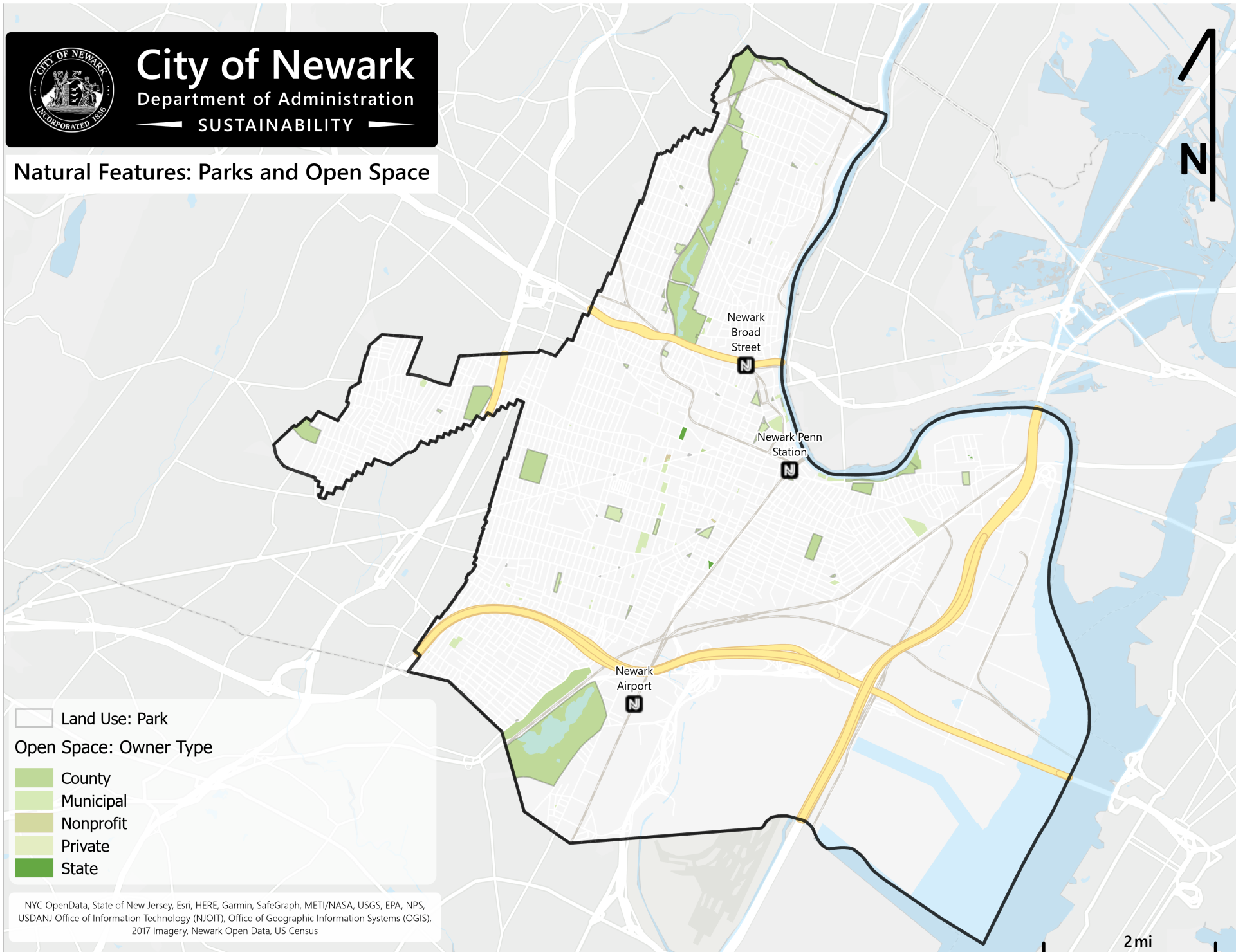
Map 26 shows how land is used across Newark, based on NJ tax data. Two notably large non-residential areas are the Newark Industrial District and the Port District in the Southeast part of the city, which includes industrial railways and the airport. The rest of the City is mostly a mixture of commercial and residential uses with higher percentages of commercial uses in the downtown area and large cemeteries/graveyards in the North, West, and South Wards.



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SUSTAINABILITY

Natural Features: Parks and Open Space



PARKS AND OPEN SPACE

Frederick Law Olmsted once remarked that big urban parks served as the “lungs of the city,” vital spaces for the health and well-being of its residents. The famed landscape architect, whose firm designed New York’s Central Park and Newark’s Weequahic Park and Riverbank Park, embodied the views of many urban reformers of his time; a point of view that was more focused on big flashy projects than the daily realities of nearby residents. In fact, a world-class park will not provide enough fresh air if polluting factories are across the street. A city’s parks are only one piece of a complex environment city residents rely on to thrive and prosper.

There are several public parks and open spaces in Newark that can be used for passive or active recreation. 1.15 square miles of Newark is classified as open space. Passive recreation includes physical activities that do not require special facilities like sports field or pavilions, whereas active recreation requires such facilities and/or special equipment. As shown in Map 27, Open Space in Newark is managed by various public, and in some cases, private entities. Branch Brook Park and Weequahic Park are the two largest Parks in Newark, comprising 89% of open space in the city; both are



Cherry Blossoms at Branch Brook Park.

part of the Essex County Parks System. Branch Brook Park, particularly renowned for its annual cherry blossom display, is the oldest county park in the U.S. (Essex County Parks Department, 2020a).

Historic Weequahic Park was designed by the famous Olmsted Brothers firm and contains the 80-acre Weequahic Lake, the largest lake in Essex County (Essex County Parks Department, 2020b).







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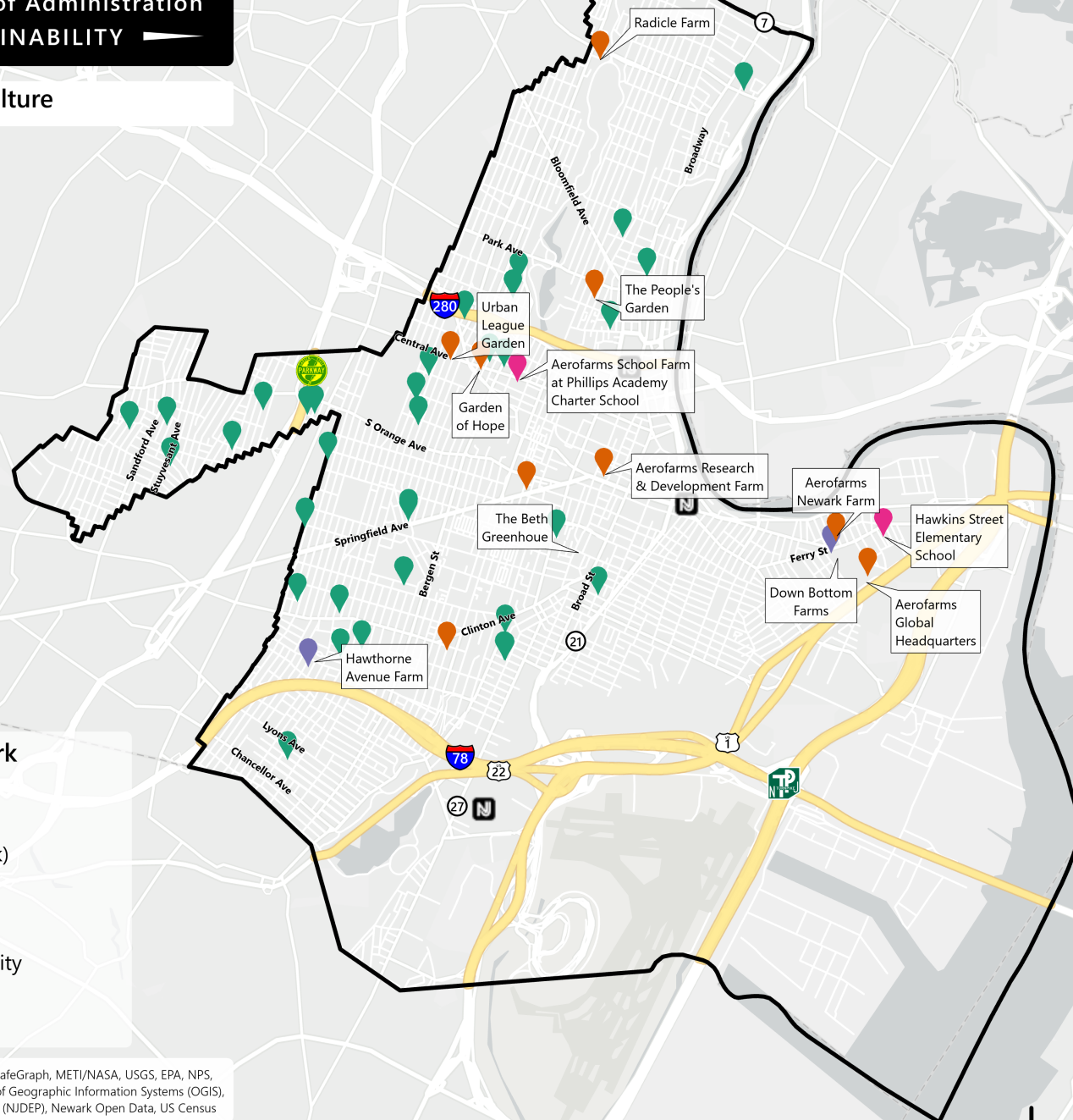
Urban Agriculture

Farms and Gardens in Newark

Type of Lot

-  Adopt-A-Lot (City of Newark)
-  Private/Non-Profit
-  School Development Authority
-  School Garden

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



URBAN AGRICULTURE

There are 52 official urban farms and gardens operating in Newark. Forty of these sites operate through the City's Adopt-A-Lot Program. The Adopt-A-Lot Program, founded in 2004, allows Newark residents to transform empty, vacant lots into community gardens, where they grow fresh flowers and organic produce and create educational and recreational havens. This program not only benefits the renter in a beloved leisure activity, but also benefits the entire neighborhood by providing a healthy communal space that is rich in environmental education and community-building.



Newark Urban Agriculture.



City of Newark

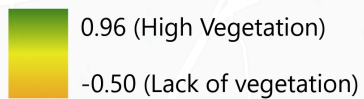
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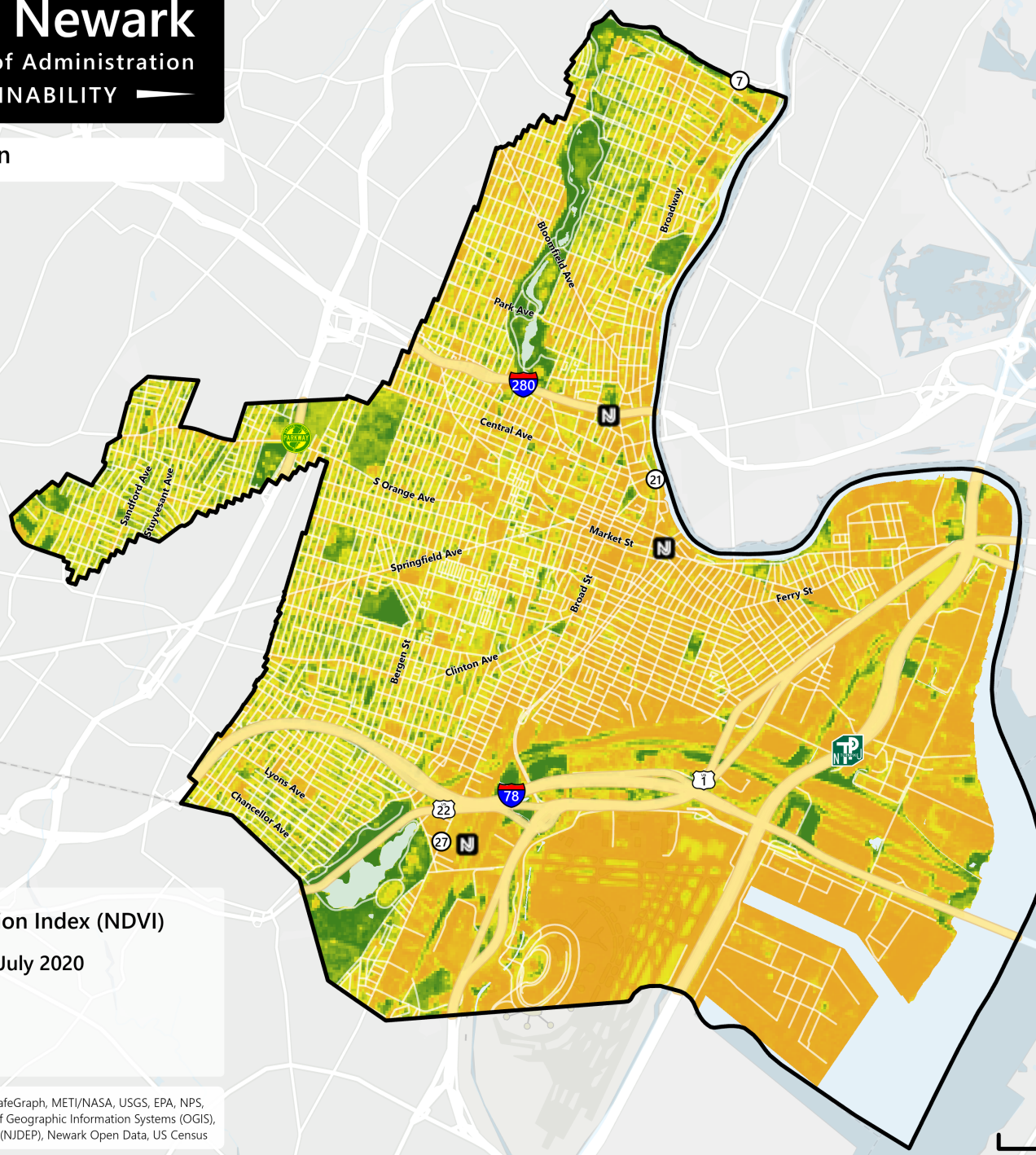
Vegetation

Normalized Difference Vegetation Index (NDVI)

Based on Landsat 8 imagery from July 2020



NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



2 mi

4B: LAND COVER

VEGETATION

The normalized difference vegetation index (NDVI) uses satellite imagery to assess whether an observed area contains live green vegetation (NASA Earth Observatory, 2000). In Newark, highly vegetated areas include the City's parks, gardens, and other open spaces, as well as green medians and tree-lined streets.

It is important to note that high vegetation does not imply high quality habitat; overgrown vacant lots or blighted properties can also contribute to a high vegetation index. Vegetation is a simple and effective way to reduce urban heat islands, enhance stormwater management, and, when responsibly managed, contribute to an overall improved quality of life.

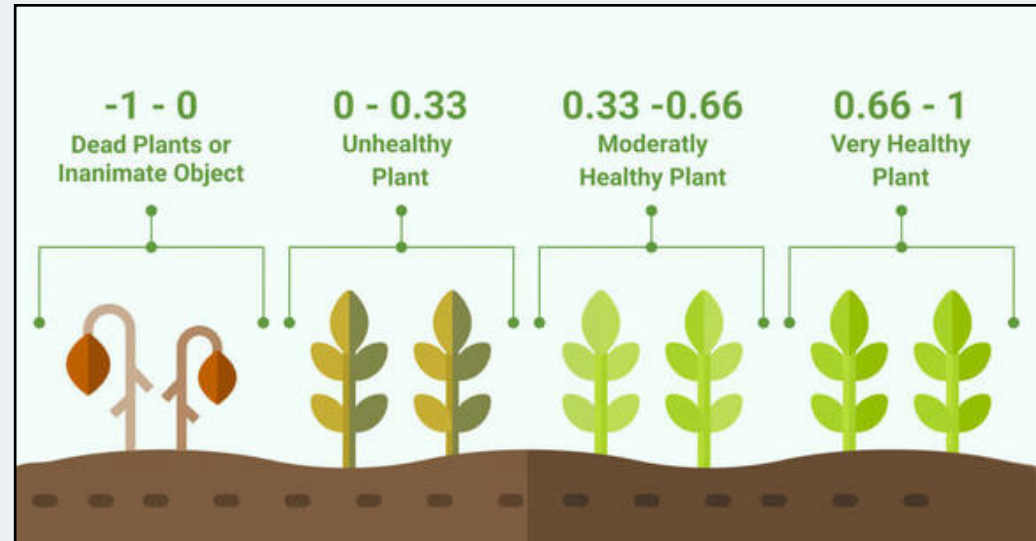


Figure 10: NDVI Explained

*NDVI is measured on a scale of -1 to +1. Numbers closer to -1 represent a lack of vegetation or dead plants. Numbers closer to +1 represent healthy vegetation.
Image source: Eos.com*

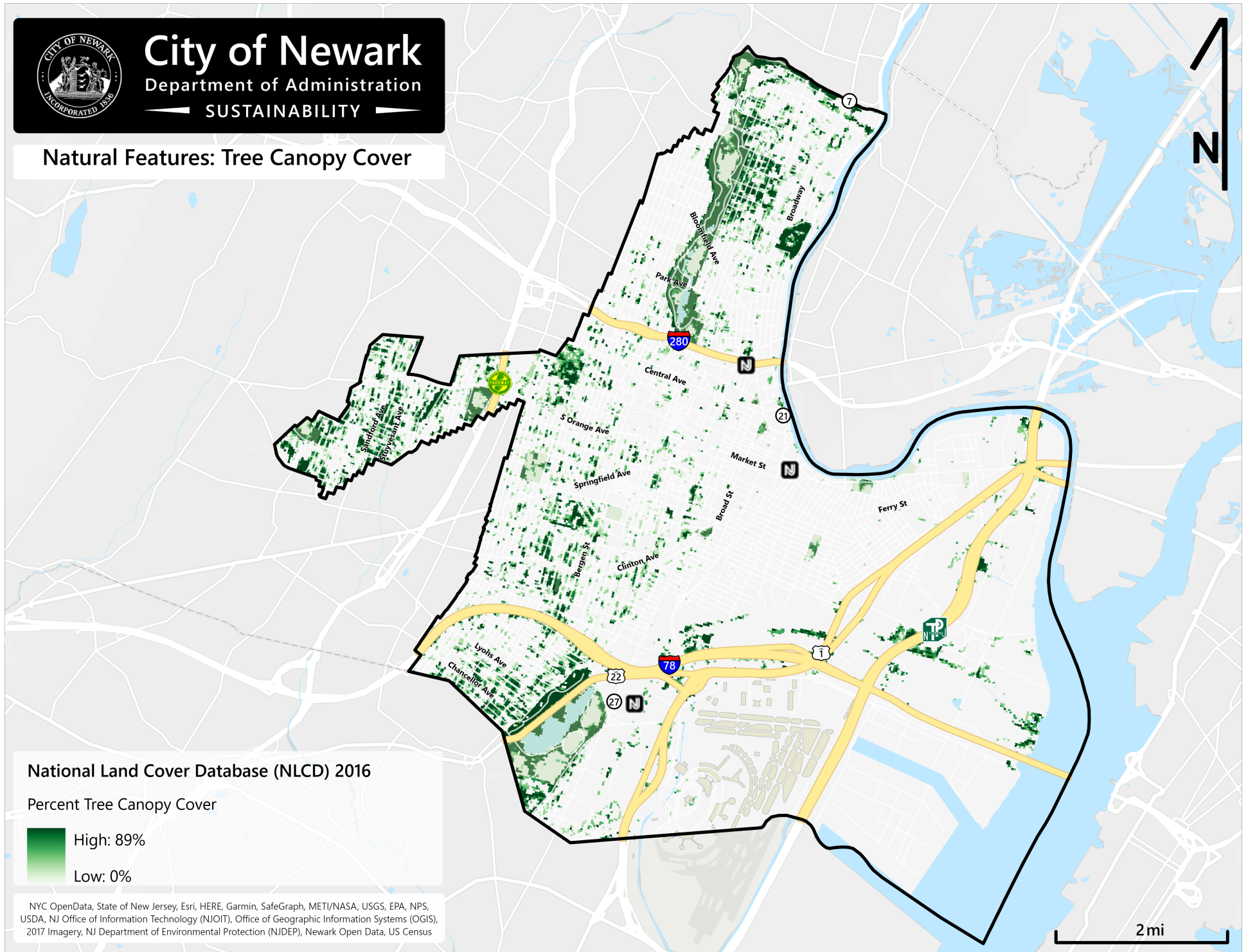


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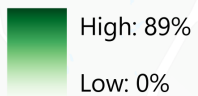
SUSTAINABILITY

Natural Features: Tree Canopy Cover



National Land Cover Database (NLCD) 2016

Percent Tree Canopy Cover



NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census

TREE CANOPY COVER

Urban tree canopy cover is associated with a range of environmental, social, economic, and health benefits. The National Land Cover Database uses satellite imagery to “estimate tree canopy cover, as a continuous variable, for each pixel across all land covers and types” (Coulston et al., 2012). In other words, the National Land Cover Database estimates the percentage of land area that is covered by tree canopy for any given part of Newark. Those values are represented in Map 30.

In Newark, tree canopy cover is concentrated in areas surrounding parks, as well as in the Western half of the City. According to a 2013 report, approximately 15 percent of land in Newark is covered by tree canopy. Read more about the state of Newark’s Tree Canopy in the 2013 report on the [City of Newark’s Existing and Possible Tree Canopy](#).



Figure 11: Detailed Tree Canopy Delineated through LiDAR

Successful, holistic urban forestry planning requires a detailed understanding of the current state of the tree canopy in Newark. Using remote sensing technologies like satellite imagery or LiDAR to analyze the urban tree canopy (UTC) is an important step in ensuring the City has the necessary data to make informed decisions. High detailed tree canopy assessments allow for:

- *Informed goal setting & policy making related to growing and maintaining the urban tree canopy*
- *Measuring success of tree planting and maintenance efforts*
- *Prioritizing tree planting to address environmental injustices related to greenspace access, urban heat island effect, air quality, etc.*
- *Supporting goals related to watershed planning, disaster preparedness, and climate adaptation.*

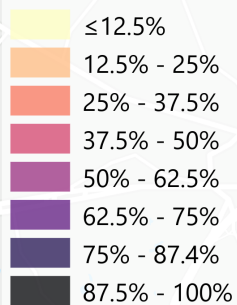


City of Newark

Department of Administration
SUSTAINABILITY

Impervious Surfaces

Percent of land area that is Impervious



NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census

IMPERVIOUS SURFACES

Impervious surfaces are artificial structures like roads, sidewalks, parking lots, and rooftops. Water runs off (rather than through) impervious surfaces, increasing the likelihood and speed of flooding. Highly impervious areas are generally associated with (and might worsen) impaired water quality in nearby water bodies, and the urban heat island effect (Frazer, 2005).

Map 31 shows the percent of impervious surfaces in different areas of Newark (note that the two prior maps were showing indicators of pervious cover, vegetation, and canopy, while this map is essentially showing the inverse, impervious cover). The Ironbound and Downtown neighborhoods of Newark have higher percentages of impervious surfaces than other neighborhoods in Newark. About 11 square miles of Newark or 42 percent, is covered by surfaces that are 85 percent or more impervious. About 3.7 square miles of Newark's surface is permeable, 2.2 square miles of which is surface water.



Figure 12: Green Infrastructure Example

Green stormwater infrastructure (GI) is a promising solution for reducing impervious surfaces and mitigating stormwater runoff that causes combined sewer overflows (CSOs) and flooding. Interventions like green roofs, bioswales (pictured), rain gardens, and permeable pavement mimic natural ecosystem processes by absorbing rainfall where it falls and soaking it into the groundwater (EPA).

Beyond mitigating stormwater runoff, GI solutions have been found to provide additional benefits like habitat provision, cleaner air, cleaner water, green jobs, and overall increased quality of the built environment (EPA).

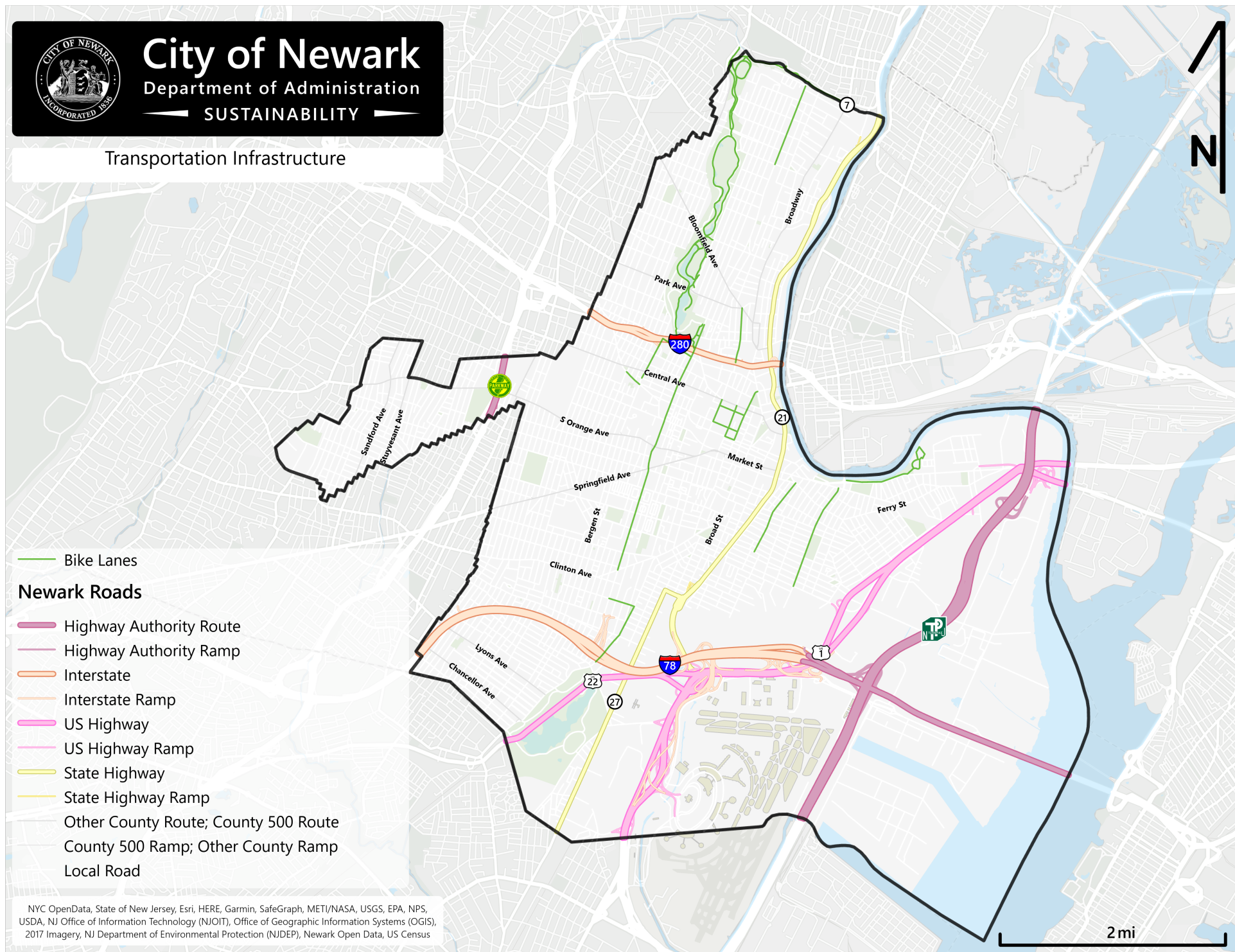


City of Newark

Department of Administration

SUSTAINABILITY

Transportation Infrastructure



4C: TRANSPORTATION INFRASTRUCTURE

ROADWAY INFRASTRUCTURE

Several major roadways cross Newark, including the NJ Turnpike, the Garden State Parkway, U.S. Routes 1 and 22, Interstates 78 and 270, and State Highways 21 (McCarter Highway) and 27 (Frelinghuysen Avenue), all designated along with other local roads in Map 32. Designated bike lanes are also shown in this figure; most lanes run through parks, including the longest paths through Branch Brook Park. While only partially shown in this figure, the East Coast Greenway, which in total runs from Maine through Florida, crosses Newark primarily via Ferry Street and Irvine Turner Boulevard and connects Newark with Jersey City.

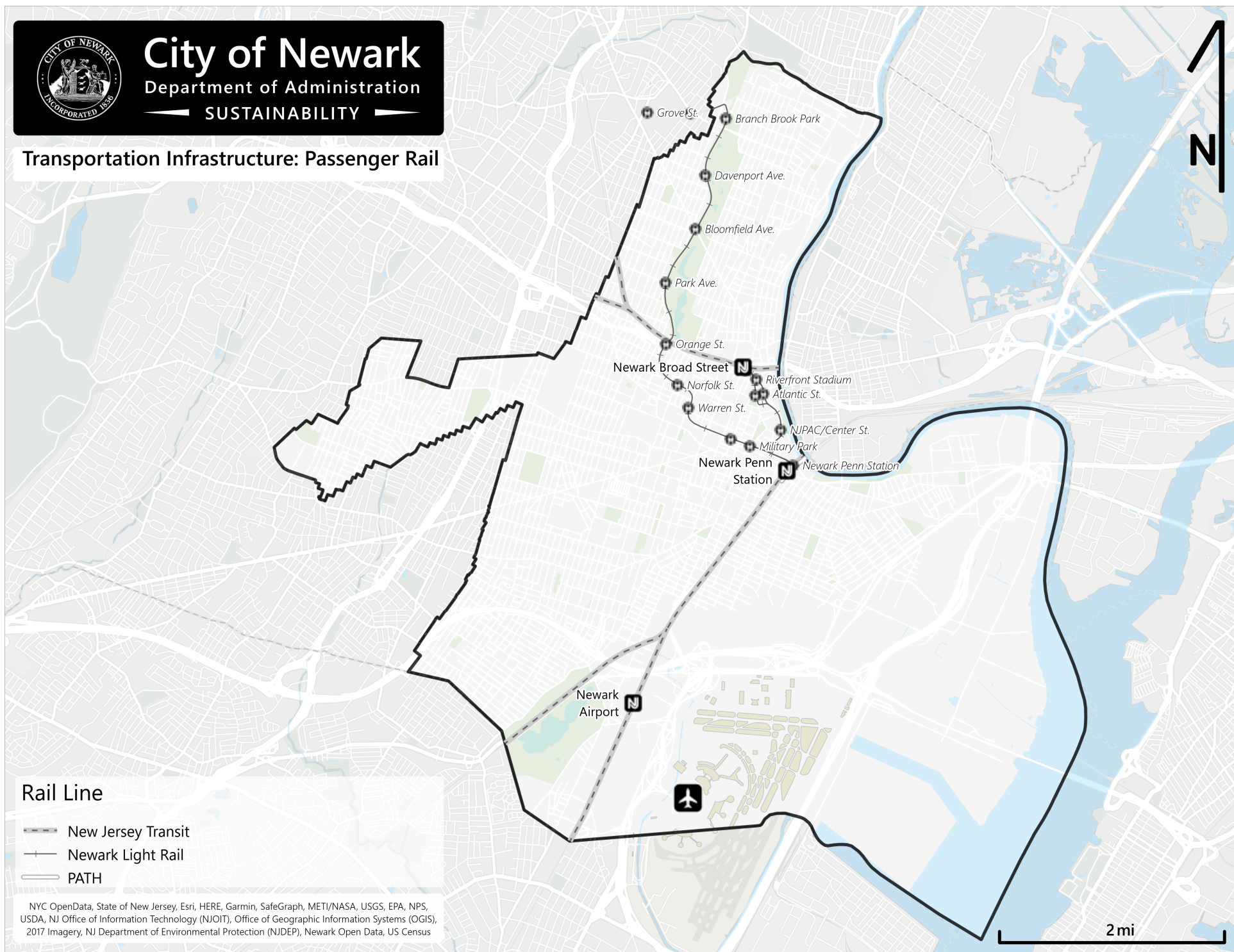


City of Newark

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Transportation Infrastructure: Passenger Rail



PASSENGER RAILWAYS

Passenger railways that pass through the city are mapped in Map 33 along with their major stations which include Newark Penn Station, Newark Broad Street Station, and Newark Airport Station. NJ Transit operates a light rail service that runs from downtown up through the North Ward, as well as several commuter rail services. The Port Authority of New York and New Jersey operates the PATH Train, with service between Newark Penn Station and New York City. Amtrak also operates intercity rail service through the middle of the city, with connections to Newark Penn Station and Newark Airport.





PART 3: COMMUNITY & POPULATION CHARACTERISTICS



CHAPTER 5: DEMOGRAPHICS

This section will review demographic characteristics of Newark residents by census tract, including race and ethnicity, poverty, unemployment, income, sex, age, population density, education, and linguistic isolation. Many of these characteristics are typically associated with increased rates of exposure to environmental pollution, as well as greater vulnerability to the health impacts associated with air, soil, and water pollution. Maps in this chapter are empty in the Southeast corner due to the industrial use of the area (i.e., demographics represent data on people based on their residence). Data for all of the demographic characteristics mapped in this chapter are 5-year estimates from the 2018 American Community Survey.



City of Newark

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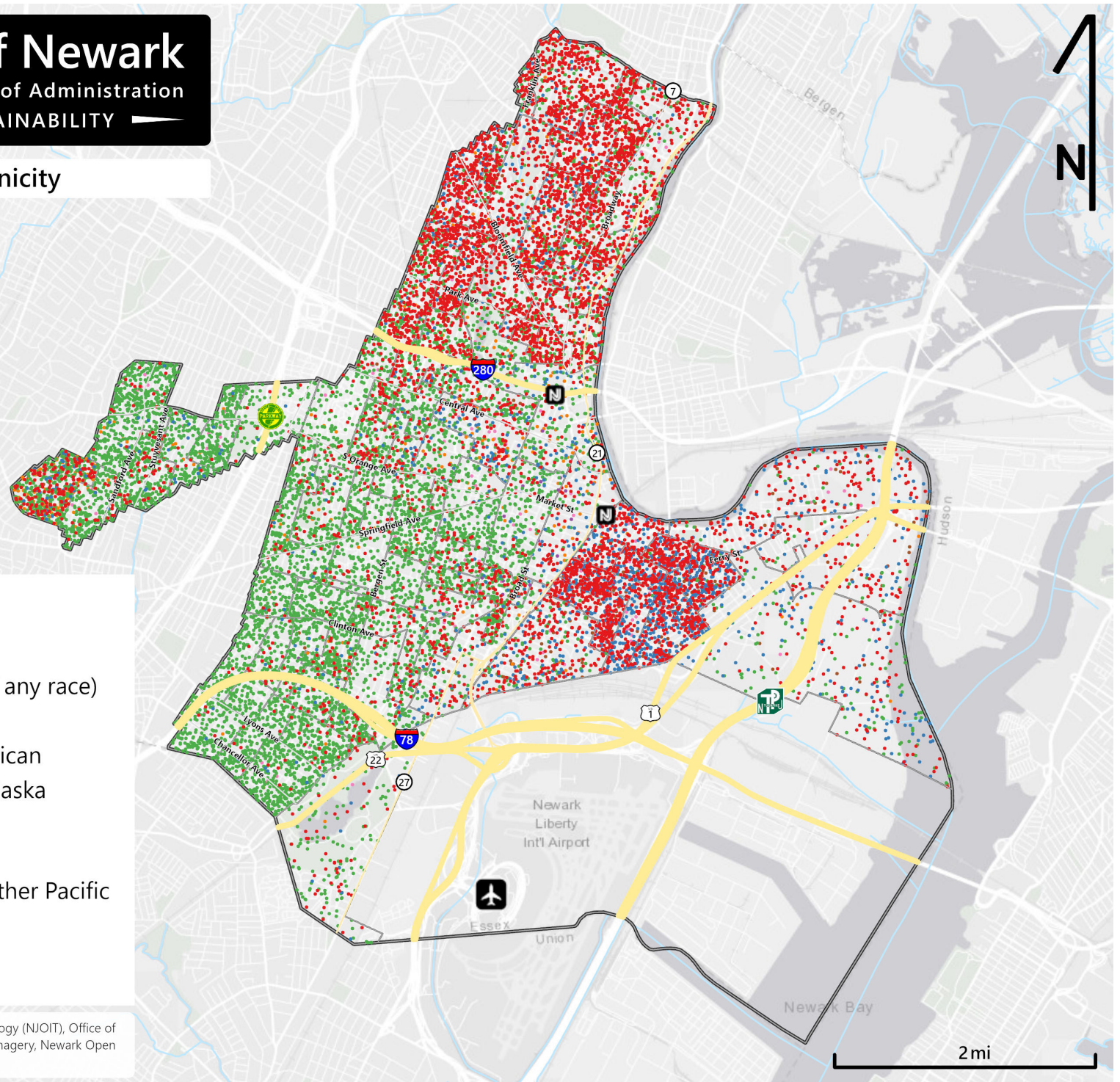
Race & Ethnicity

Race & Ethnicity

1 Dot = 15 People

- Hispanic or Latino (of any race)
- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Other race
- Two or more races

Esri, HERE, NPSNJ Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, US Census



RACE & ETHNICITY

Map 34 shows the distribution of race and ethnicity across Newark. Each dot represents 15 people found in that census tract. (The dots are randomly spaced within each census tract and should not be used for site-specific population analysis.) People who identified as Hispanic or Latino are represented by red dots, regardless of their race. The remainder of the population is represented by dots according to their race.

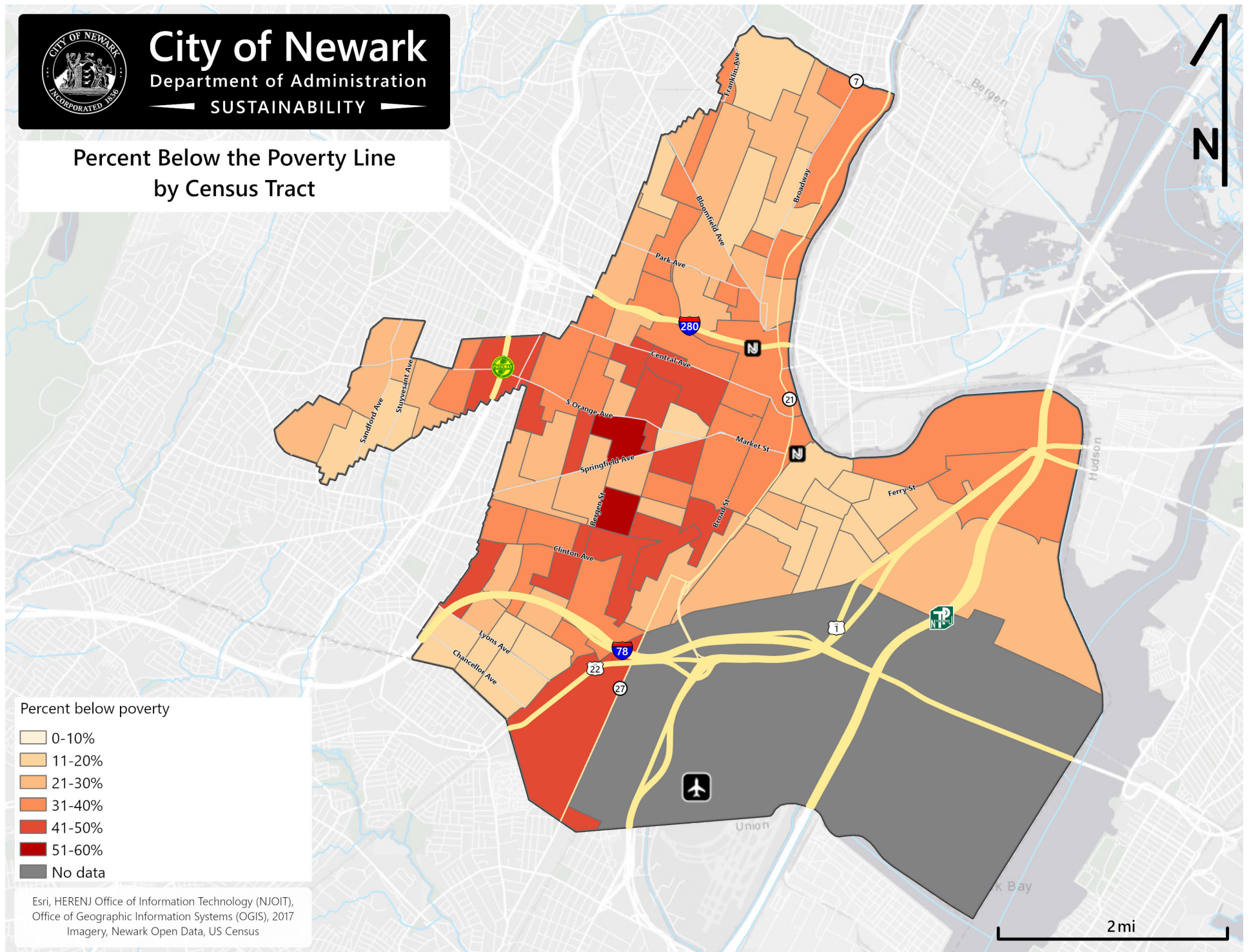
The concentration of people who identify as Hispanic or Latino is highest in the North Ward, East Ward (particularly in the Ironbound), and in the Vailsburg neighborhood of the West Ward. The concentration of people who identify as Black or African American is highest in the Central, South, and West Wards, and the concentration of people who identify as White is highest in the East Ward. There are people who identify as Asian distributed throughout the city. There are no large concentrations of people who identify as other races visible on the map.



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Percent Below the Poverty Line by Census Tract



POVERTY

Map 35 shows the percentage of households below the “federal poverty level” (FPL) by census tract. The FPL is “a measure of income issued every year by the Department of Health and Human Services ... used to determine your eligibility for certain programs and benefits, including savings on Marketplace health insurance, and Medicaid and Children’s Health Insurance Program coverage” (United States Centers for Medicare & Medicaid Services, 2020). People below the poverty line are especially vulnerable to pollution and climate change, both because of the limitations to access and opportunity associated with poverty itself, and because poverty is closely intertwined with most other socioeconomic factors that affect a person’s access to health insurance and healthcare (Erickson et al., 2008). While 10.4% of households in NJ are below the poverty line, 28% of Newark households are below the poverty line, with individual census tracts ranging from 11% to 60%. Higher concentrations of poverty are found in the Central and South Wards.

While the FPL defines income below \$26,200/year for a family of four as

“living below the poverty line”, local decision-makers prefer to delineate policy based on “area median income” (AMI). Because New Jersey is a high-cost state, the FPL and AMI may underrepresent the true extent of poverty in Newark. For example, the New Jersey Comfort Partners Program (designed to help income-eligible customers reduce their utility bills through energy conservation and efficiency improvement) sets programmatic eligibility at \$87,900 annually for a family of four (New Jersey Board of Public Utilities, 2020). For this ERI report, we have chosen to visualize FPL in order to optimize our opportunity to compare Newark statistics with those of other census tracts, using a nationally consistent dataset.



City of Newark

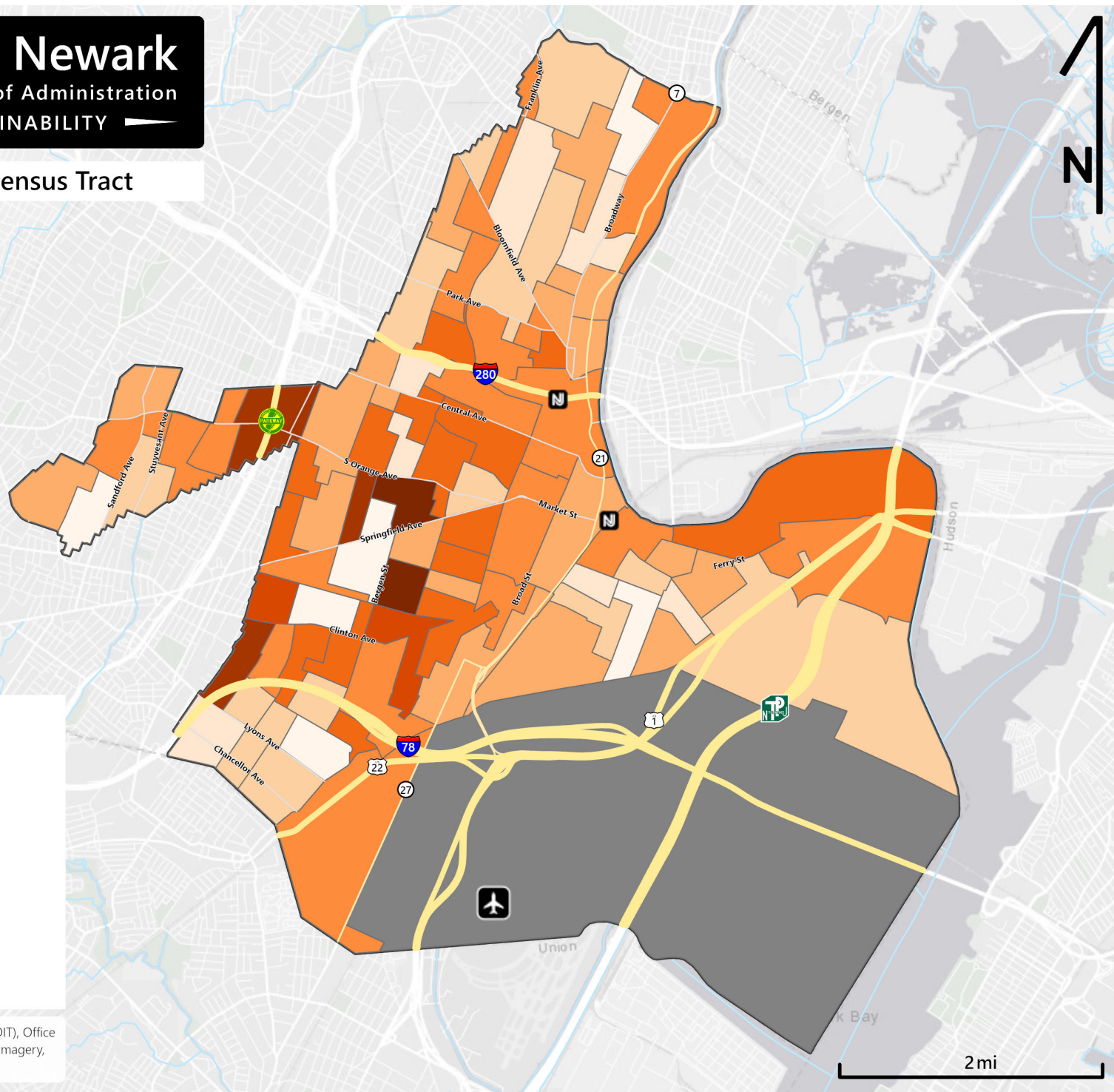
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SUSTAINABILITY

Child Poverty by Census Tract

Percent of Children in Poverty

- 0-10%
- 11-20%
- 21-30%
- 31-40%
- 41-50%
- 51-60%
- 61-70%
- 71-80%
- 81-90%
- No data

Esri, HEREJ Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, EPA's EJScreen



CHILD POVERTY

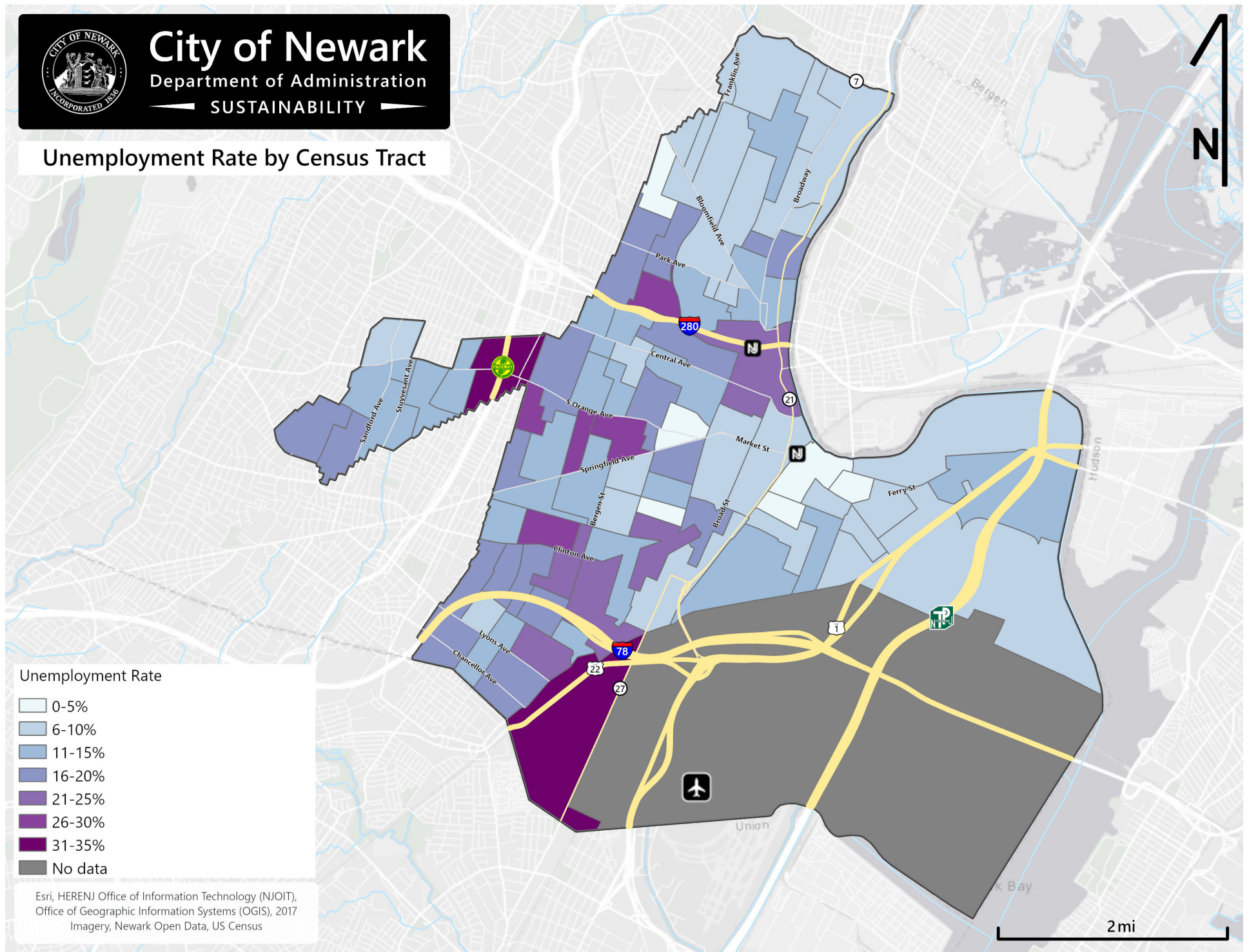
Map 36 shows the percentage of children below the poverty line by census tract. While 14.8% of children in NJ live in households below the poverty line, 69% of children in Newark live in households below the poverty line, with individual census tracts ranging from 6% to 86%. Many of the patterns for child poverty among census tracts align with the patterns for overall poverty in the city, with some differences due to the age distribution of the census tracts. Higher concentrations of children below the poverty line are found in the Central, West, and South Wards.



City of Newark

Department of Administration
— SUSTAINABILITY —

Unemployment Rate by Census Tract



UNEMPLOYMENT

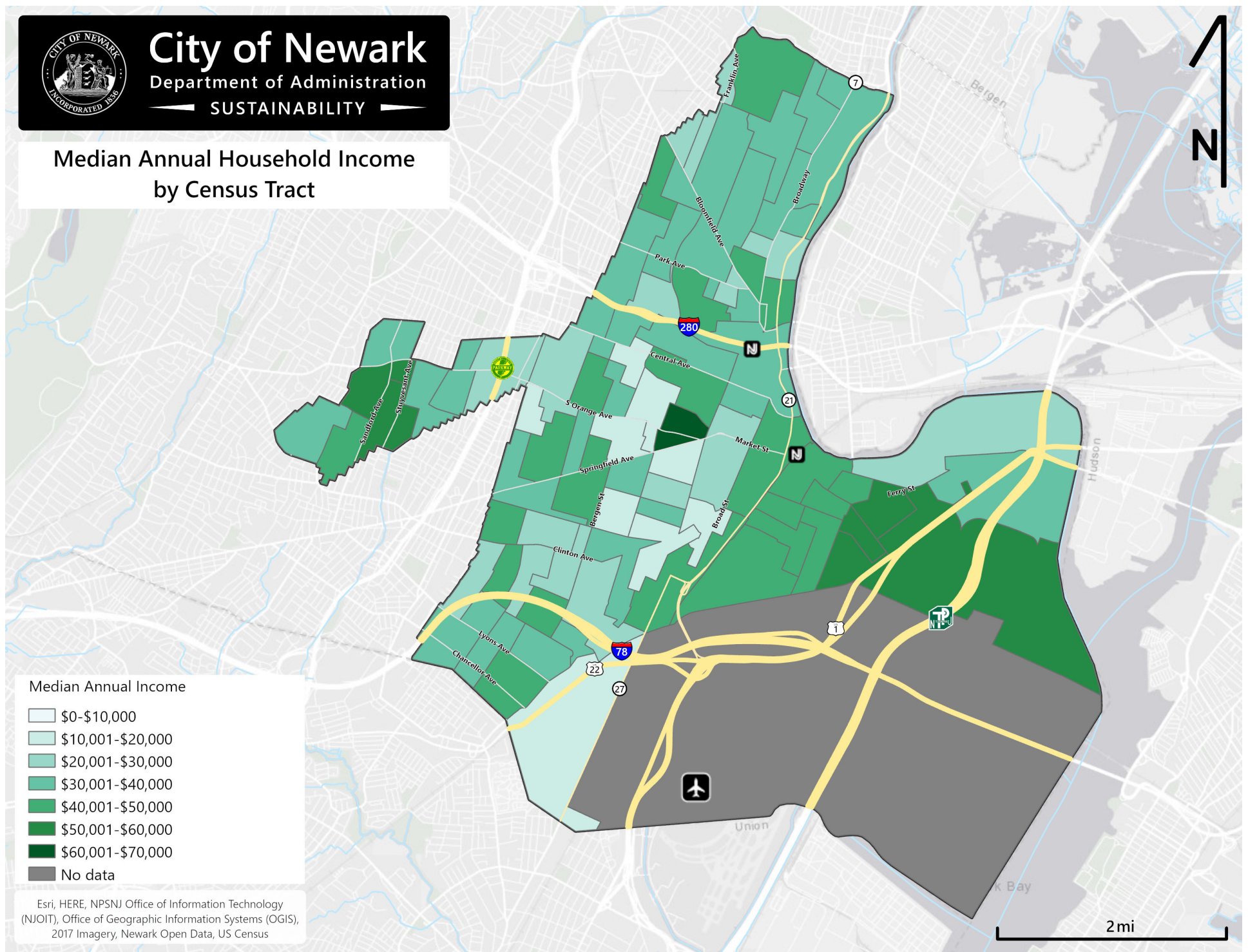
Map 37 shows the percentage of the working-age population (defined as individuals between the ages of 20 to 64 years old) that is unemployed by census tract. On the whole, Newark's unemployment rate (7.5%) was slightly higher than the NJ average (6.1%). However, unemployment levels for individual census tracts ranged from 1% to 34%. Higher unemployment rates were concentrated in the West and South Wards.



City of Newark

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SUSTAINABILITY

Median Annual Household Income by Census Tract



INCOME

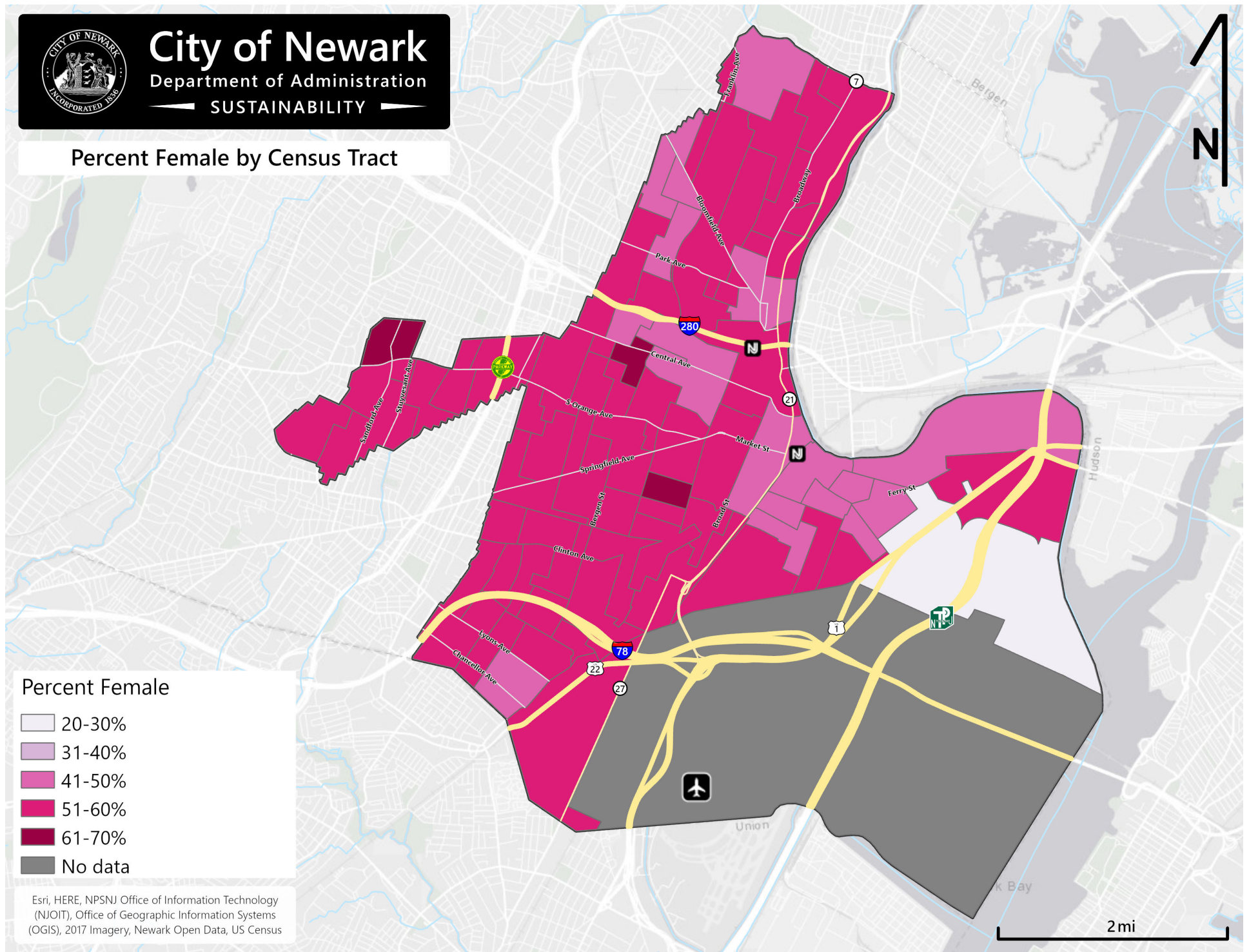
Map 38 shows median annual household income by census tract. While the median annual household income for NJ is \$79,000, the median annual household income for Newark is \$35,000, with individual census tracts ranging from \$25,000 to \$67,000. Lower income households are concentrated in the South and Central Wards.



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Percent Female by Census Tract



PERCENT FEMALE

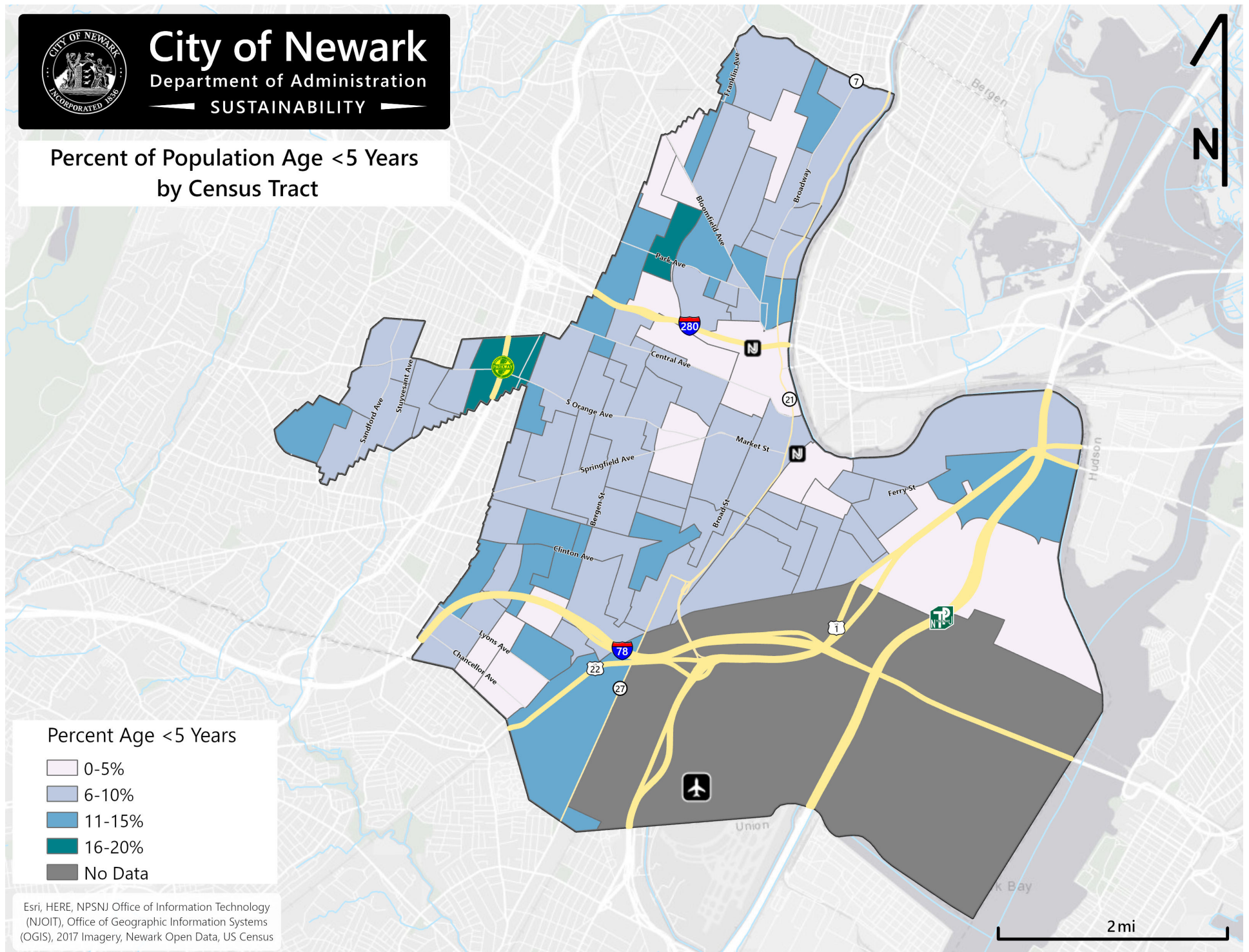
Map 39 shows the percentage of the population that is female, for each census tract in Newark. The sex ratio is shaped by biological, social, and economic forces and, in turn, has an impact on society. One possible explanation for a higher percentage of females in a census tract is that the age distribution is older. (For example, younger people move out of the area while the remaining residents age, with females having longer average life spans.) A possible explanation for a lower percentage of females in a census tract is that there are male-dominant jobs in the area, with single men living nearby for work. The census tract with the lowest percentage of females (26%) is in the East Ward. The census tract with the highest percentage of females (68%) is in the West Ward.



City of Newark

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SUSTAINABILITY

Percent of Population Age <5 Years by Census Tract



POPULATION UNDER 5

Age groups that are considered more vulnerable include children under five, and adults 65-years-old and over. Children are vulnerable because they are in a stage of rapid development and they take in more air, food, and water per unit of body weight than adults. Children also have a long future lifespan during which to potentially accumulate negative exposures and develop disease. Map 40 shows the percentage of the population by census tract that is younger than five years of age. The percentage of the NJ population that is younger than five is 5.8%. In Newark, it is 7.7%, with individual census tracts ranging from 2% to 17%. The highest percentages of this vulnerable age group are concentrated in the West Ward.



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SUSTAINABILITY

Percent of Population Age 65 Years and Older by Census Tract

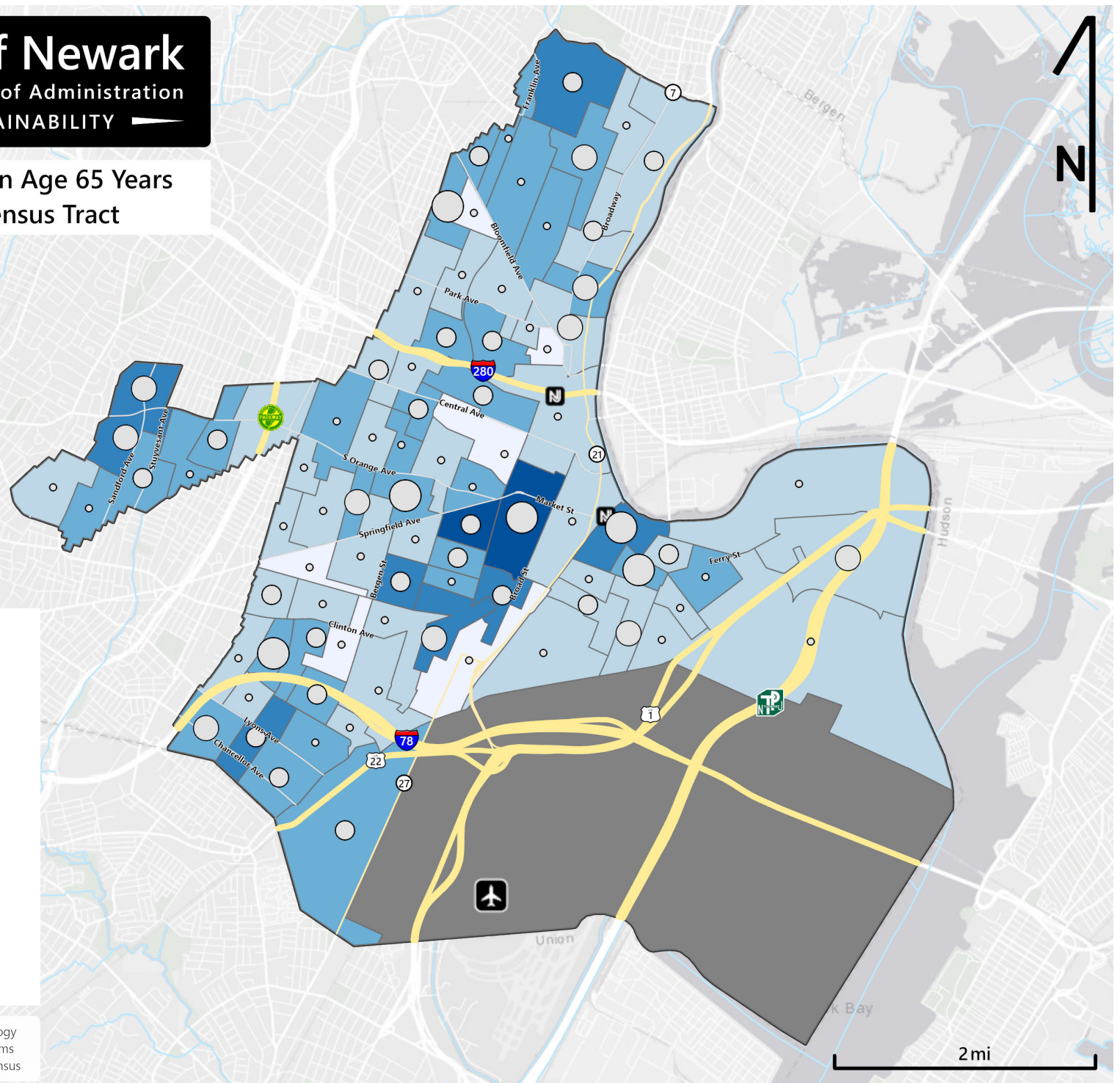
Percent Age 85+ Years

- 0-1.0%
- 1.1-2.0%
- 2.1-3.0%
- 3.1-4.0%

Percent Age 65+ Years

- 0-5%
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- No Data

Esri, HERE, NPSNJ Office of Information Technology (NOIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, US Census



POPULATION OVER 65

Older people are considered vulnerable because they frequently have existing diseases, increasing frailty, and decreased ability to repair damage in the body. Map 41 shows the percentage of the population by census tract that is 65 years of age or older (indicated by the shading). The sizes of the circles shown in each census tract are proportional to the percentage of the population that is 85 years of age or older.

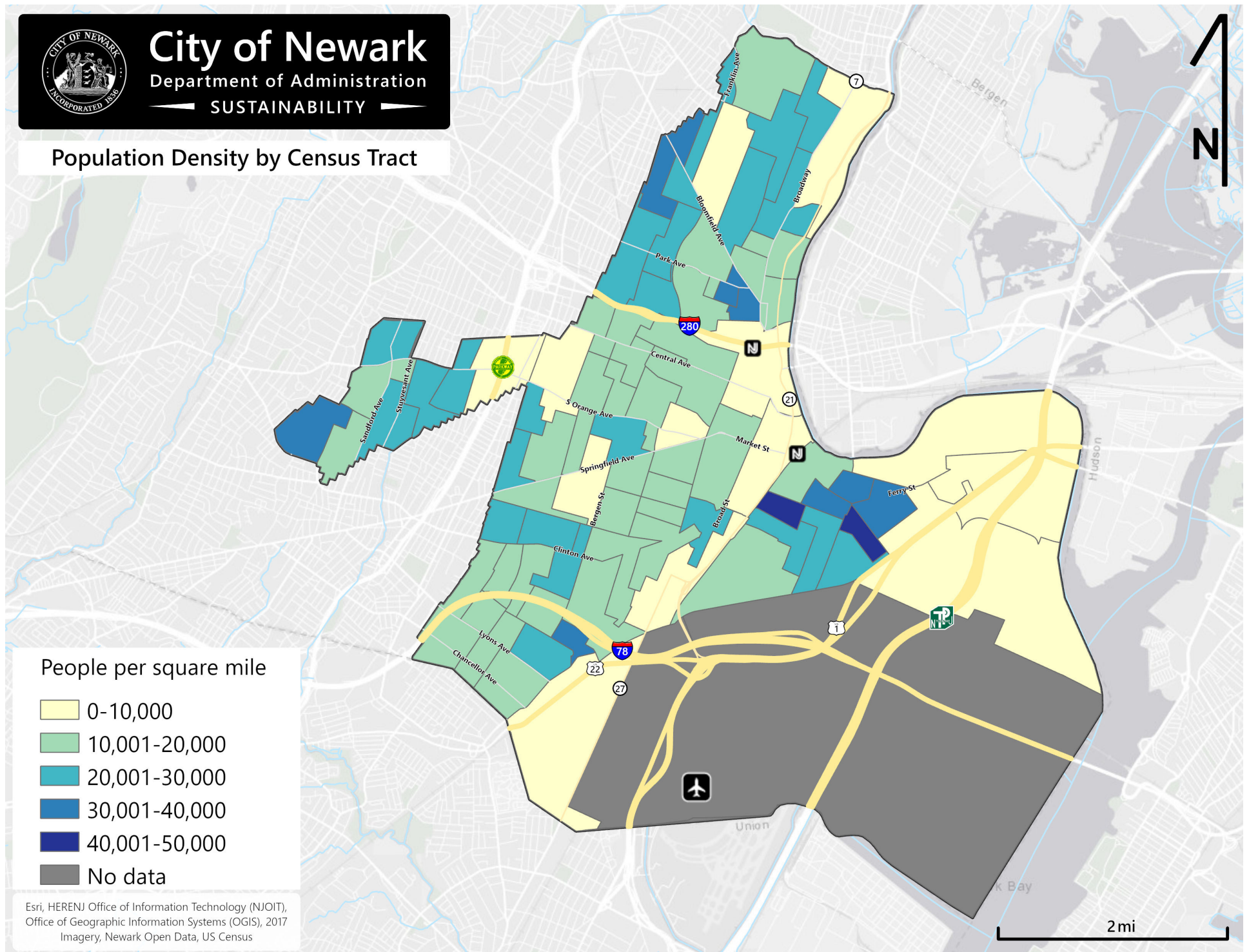
The percentage of the NJ population that is 65 or older is 16.6%, while the percentage of the Newark population in this age range is 10%, with individual census tracts ranging from 3% to 22%. Higher percentages of this vulnerable age group concentrated in the Central Ward. The pattern is similar for the percentage of the population that is 85 years or older. Generally, higher densities of elderly residents tend to be in whiter and wealthier areas because of the lower life expectancy in BIPOC (Black, Indigenous, and People of Color) and lower income communities and hence there are lower densities in EJ communities unless there are senior facilities clustered in them (Dr. Ana Baptista, personal communication, January 25, 2021).



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Population Density by Census Tract



POPULATION DENSITY

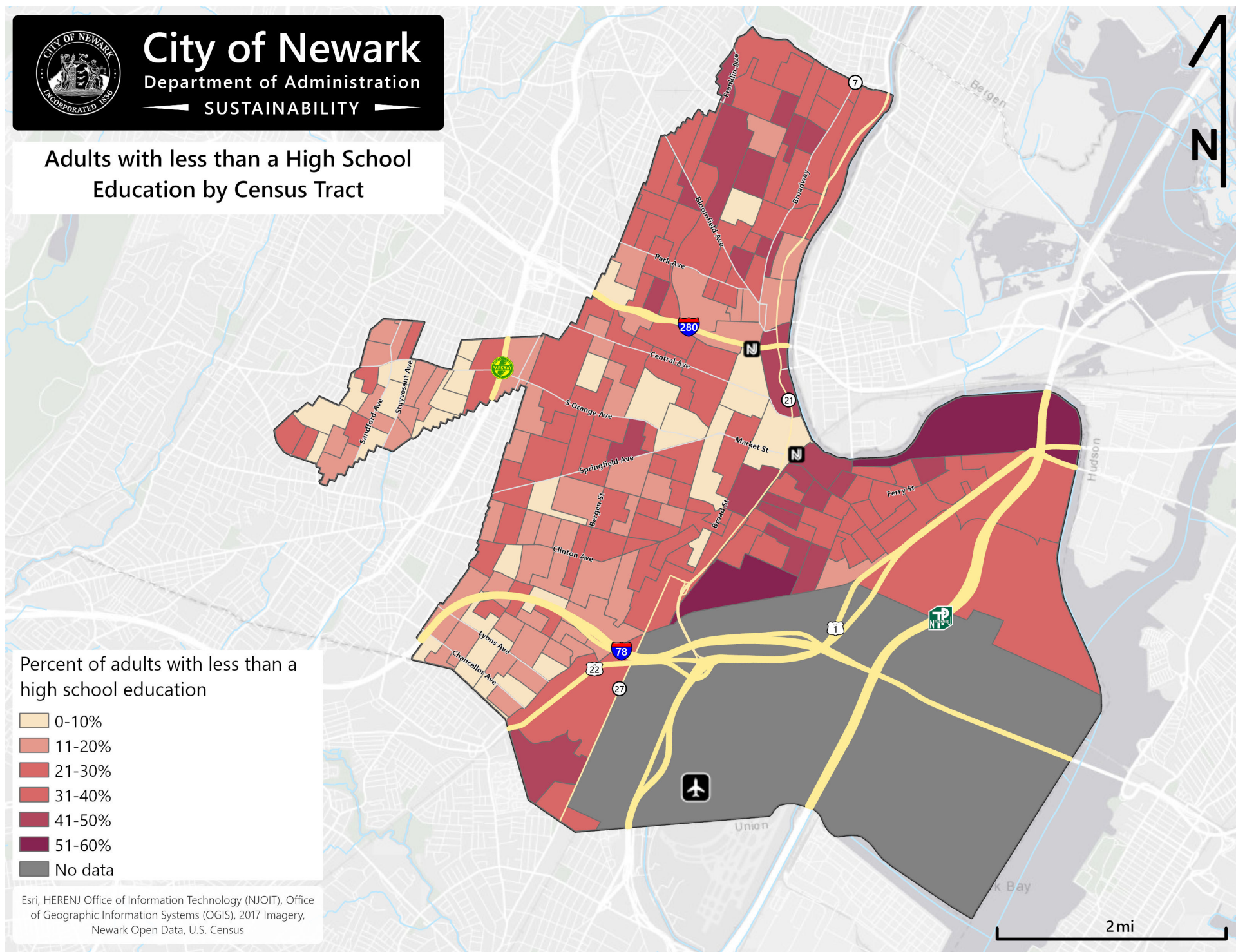
New Jersey is the fourth smallest U.S. state in terms of geographic size. With over 9 million residents, it is the most densely populated state. The urbanized northeastern section of the state is among the most densely populated communities in the country. According to U.S. Census data, in 2010, Newark's total population was 277,140 which increased by about 3,600 people from 2000. Newark has an average population density of 20,114 people per square mile, with the densest areas located in the East Ward, and a few areas bordering the North and Central Wards, as well as the west side of the Vailsburg neighborhood in the West Ward (Map 42).



City of Newark

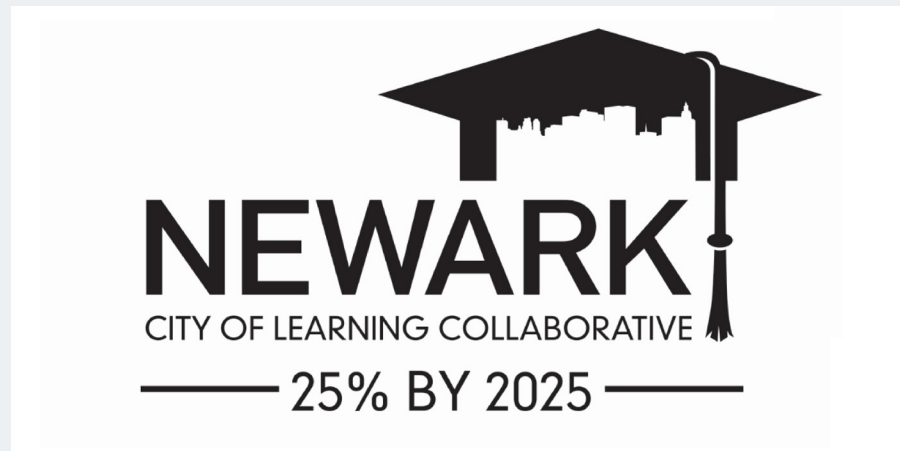
Department of Administration
SUSTAINABILITY

Adults with less than a High School Education by Census Tract



EDUCATION

The link between education and health is complex, and closely tied to income. A family's annual earnings often dictate the opportunities available to lead healthier lives. Higher levels of education can create opportunities for higher paying jobs, more health-promoting resources, larger social networks, and more knowledge about healthy behaviors. Lower education often results in lower earnings, and less disposable income. This means that low- and moderate-income families often live in neighborhoods lacking adequate medical care facilities and other amenities that promote health, while increasing the likelihood of their exposure pathways to environmental pollution. Map 43 shows the percentage of adults with less than a high school education by census tract. While the percentage of the adult population of NJ that has less than a high school education is 10.4%, the percentage in Newark is 25%, with individual census tracts ranging from 2% to 56%, with higher percentages in the North and East Wards.



The Newark City of Learning Collaborative was launched in January 2015 to address this core challenge, with a central mission of increasing the rate of Newarkers completing higher levels of education to above 25% by the year 2025. The NCLC's mission is to "ensure that all Newark residents have the opportunity, information, and access to go to college, afford college, complete college, and ultimately obtain good jobs." More information can be found at <https://nclcn Newark.org/>.



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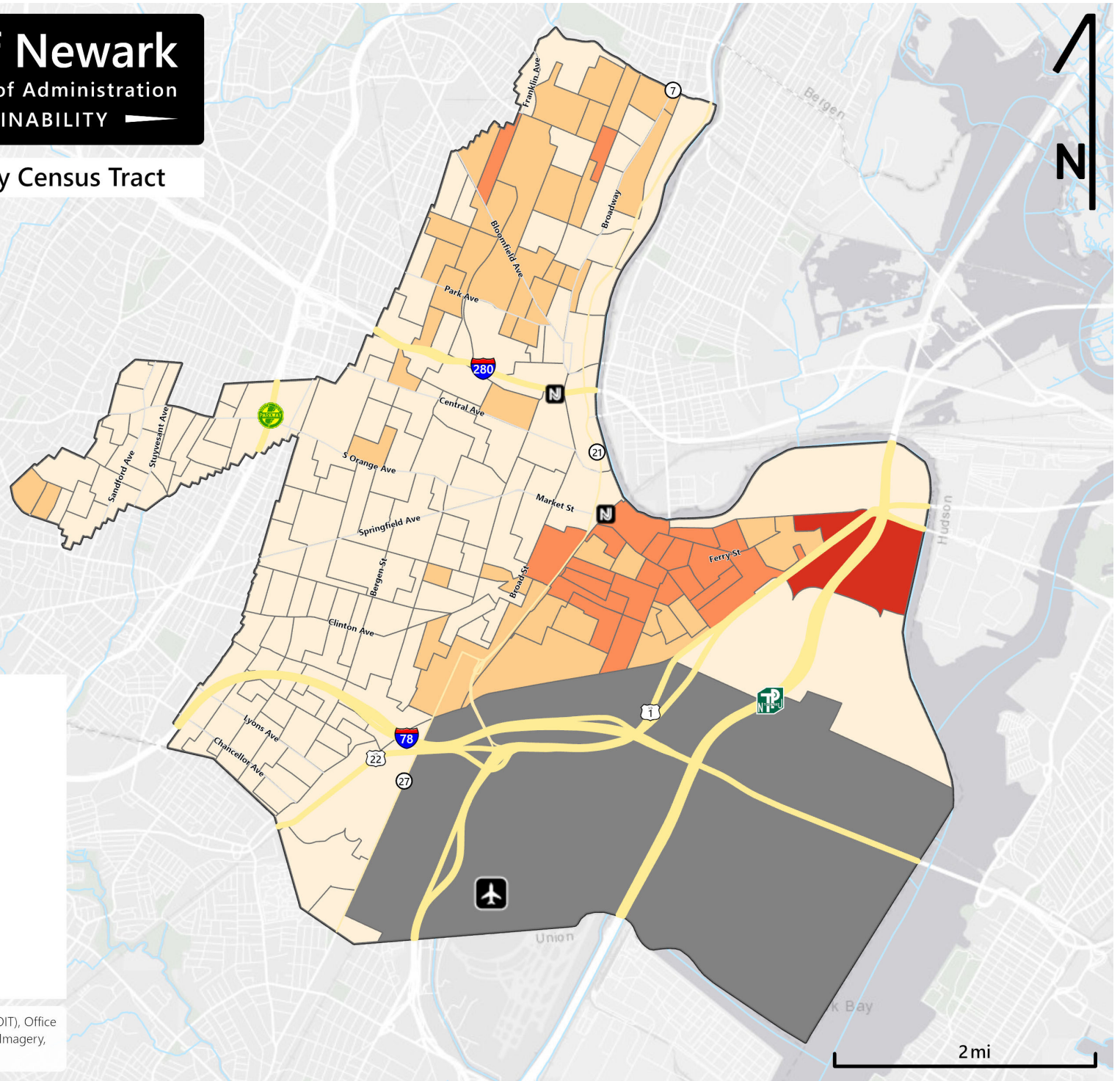
SUSTAINABILITY

Linguistic Isolation by Census Tract

Percent of Households with Linguistic Isolation



Esri, HERE/NT Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, U.S. Census



LANGUAGE

Households with limited English proficiency are defined by the American Community Survey, based on whether at least one adult (or a child over the age of 14) speaks only English or speaks English “very well” as a second language. The variable referred to as “linguistic isolation” is a key factor to consider in the context of Environmental Justice because adults who cannot speak English often face difficulty accessing social services and healthcare. Additionally, they may not receive or understand alerts, notifications, and other important information regarding local environmental pollution risks. Areas with higher levels of linguistic isolation may also face economic and social isolation.

Map 44 shows the percentage of households with linguistic isolation by census tract. While the percentage of households with linguistic isolation in NJ is 15.9%, the percentage in Newark is around 25%, with individual census tracts ranging from 2% to 56%. Higher percentages of linguistic isolation can be found in the North and East Wards, coinciding with the neighborhoods with many Latino and Hispanic households.

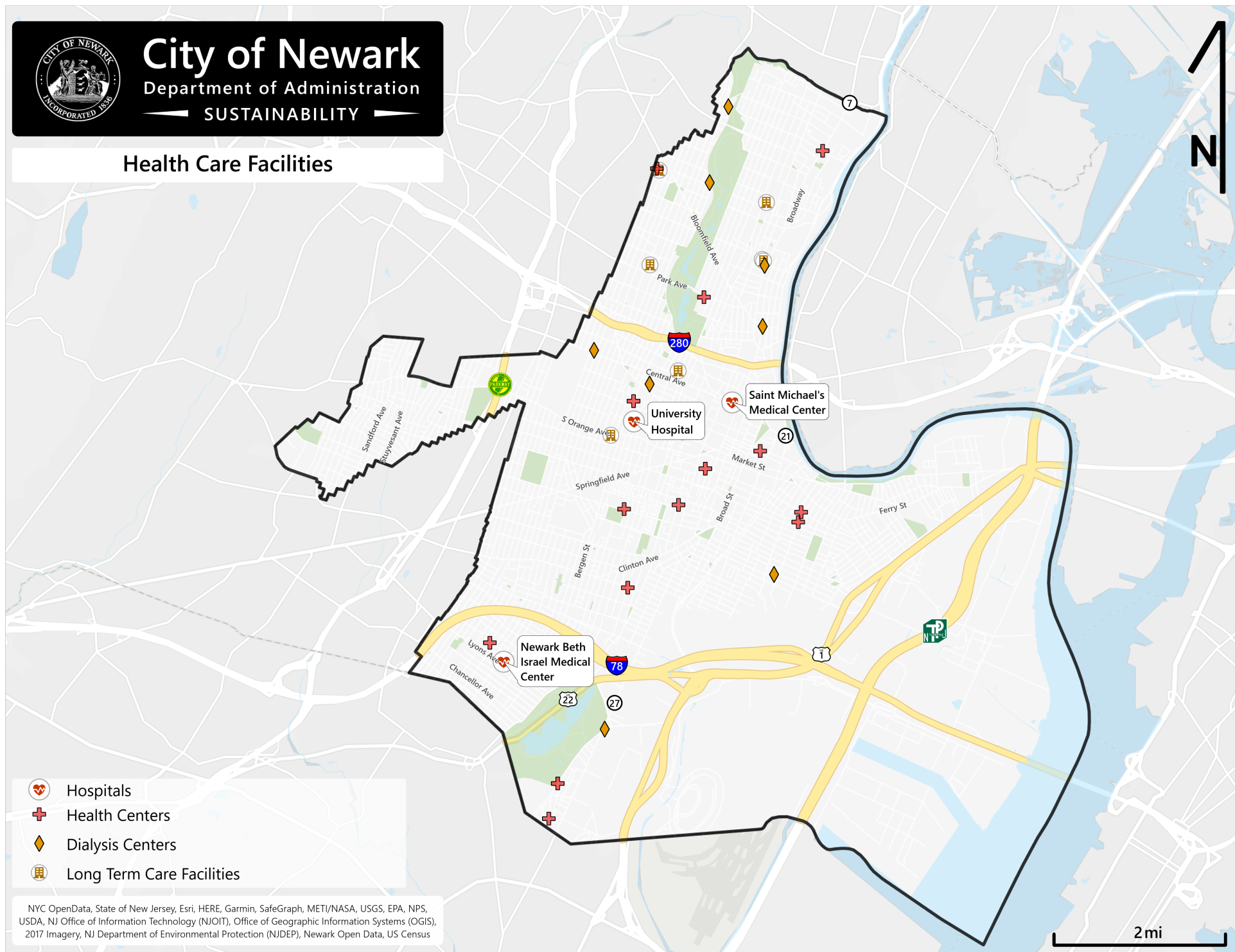


City of Newark

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SUSTAINABILITY

Health Care Facilities



NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census

OTHER VULNERABLE POPULATIONS

Another way to identify vulnerable populations is to locate facilities with concentrated occupancy, whether temporary or permanent, such as hospitals and other healthcare facilities; jails, prisons, and other detention facilities; low-income housing complexes; childcare facilities; and nursing homes. Maps 45 through 48 show the location of many of these types of facilities in Newark.

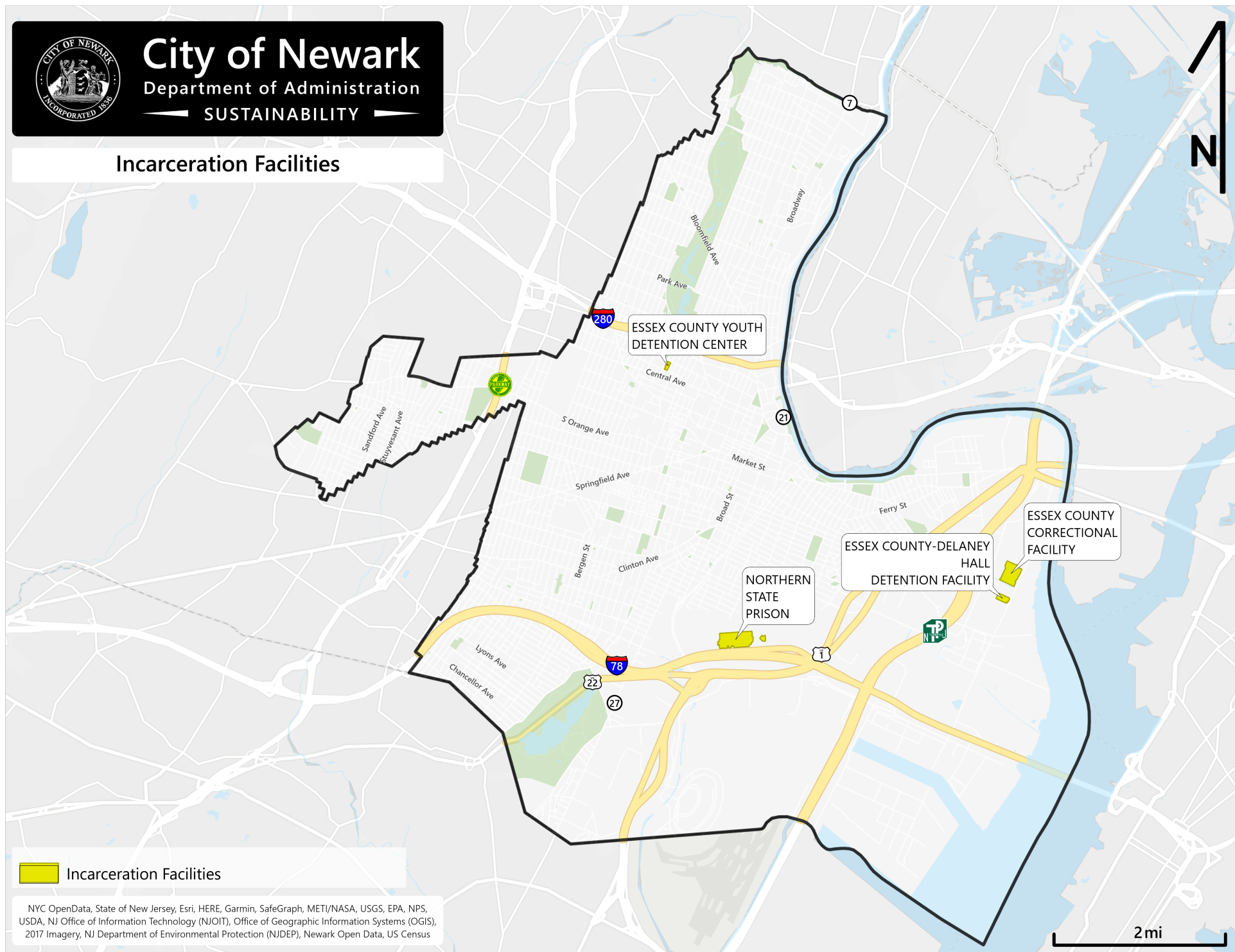


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SUSTAINABILITY

Incarceration Facilities



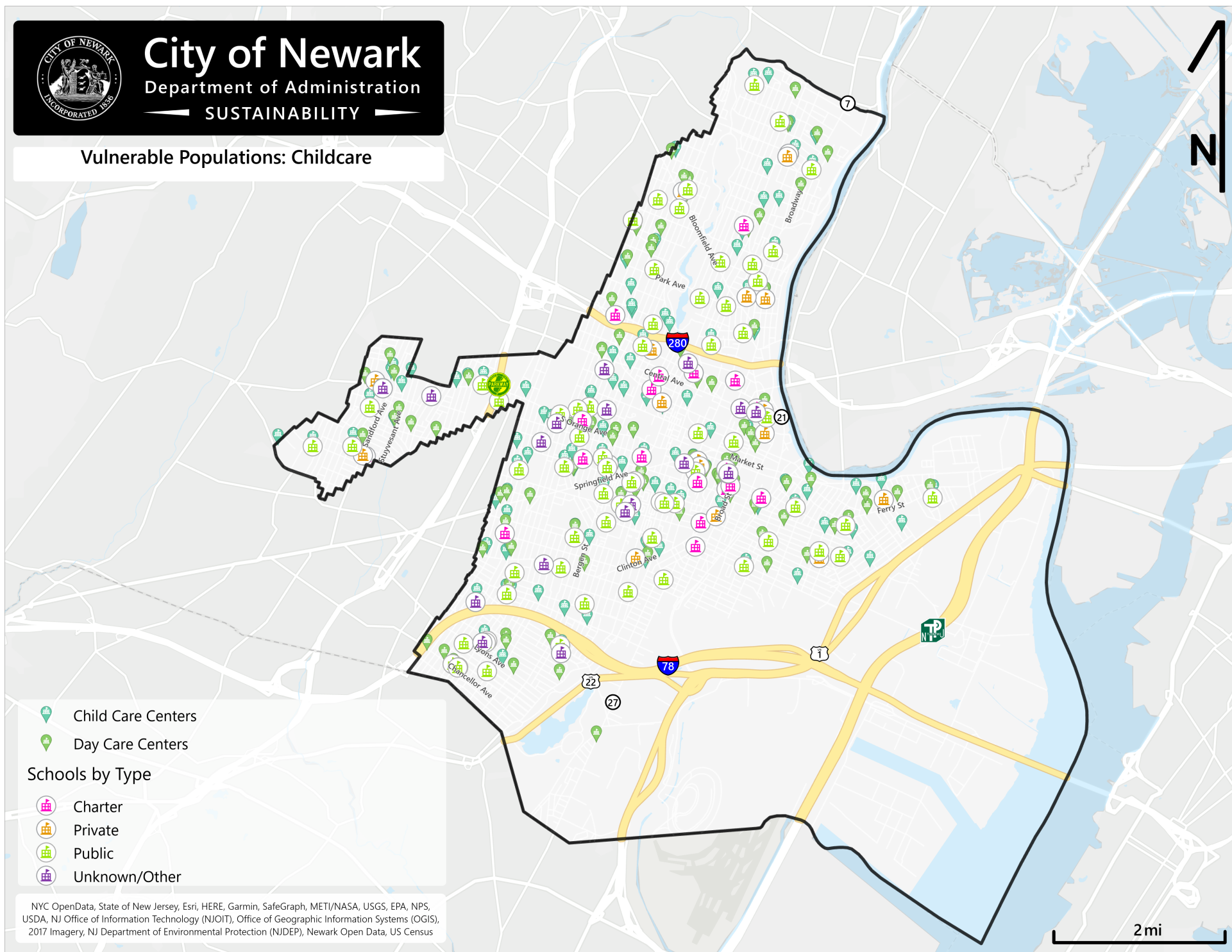


City of Newark

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SUSTAINABILITY

Vulnerable Populations: Childcare



Map 47: Childcare Facilities



City of Newark

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SUSTAINABILITY

Affordable Housing

Affordable Housing Complexes

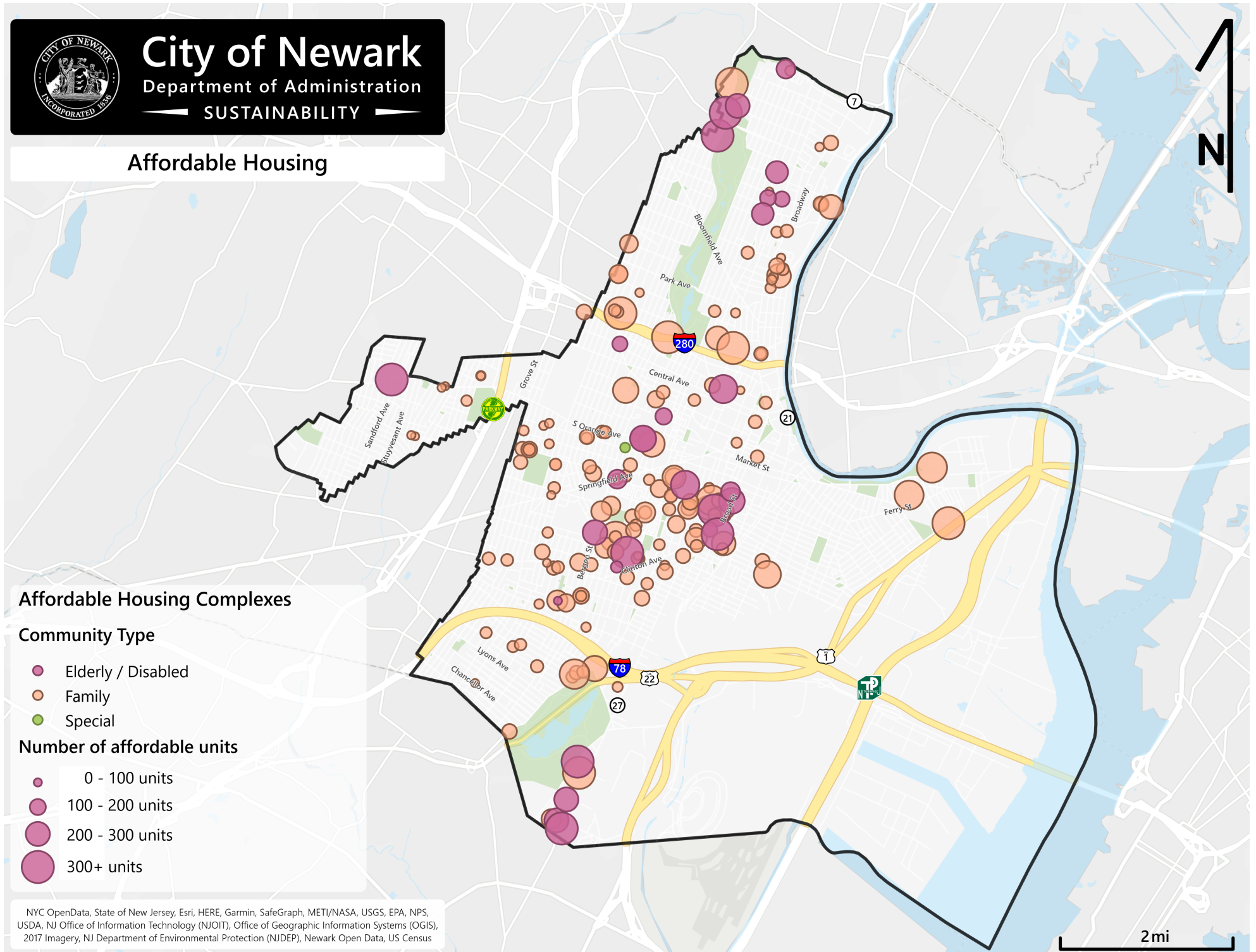
Community Type

- Elderly / Disabled
- Family
- Special

Number of affordable units

- 0 - 100 units
- 100 - 200 units
- 200 - 300 units
- 300+ units

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census





Mayor Baraka watching students plant trees at a community garden in 2017.

"A quarter of Newark's children have asthma and are hospitalized at 30 times the national rate. Cleaning our air of toxins and particulate matter isn't a choice between the economy and healthy children. There is no choice."



CHAPTER 6: HEALTH

Environmental resources are an essential pillar of sustainable human well-being. When these resources are polluted, and humans are exposed to hazards via air, water, soil, and food—or other contextual stressors from the built environment—human health can be impacted. Since environmental risk factors are unequally distributed, so are the associated impacts. This section reviews the distribution of different health outcomes and indicators relevant to environmental risk factors in Newark, including life expectancy (data from U.S. Small-area Life Expectancy Estimates Project); asthma, coronary heart disease, high blood pressure, obesity, frequent mental distress, and diabetes (data from the Center for Disease Control and Prevention’s 500 Cities Project, 2017 1-year modeled estimates); lead exposure risk index (data from American Community Survey, 2018 5-year estimates); and low birthweight and lung cancer from additional sources.

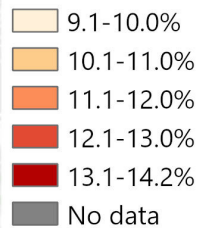


City of Newark

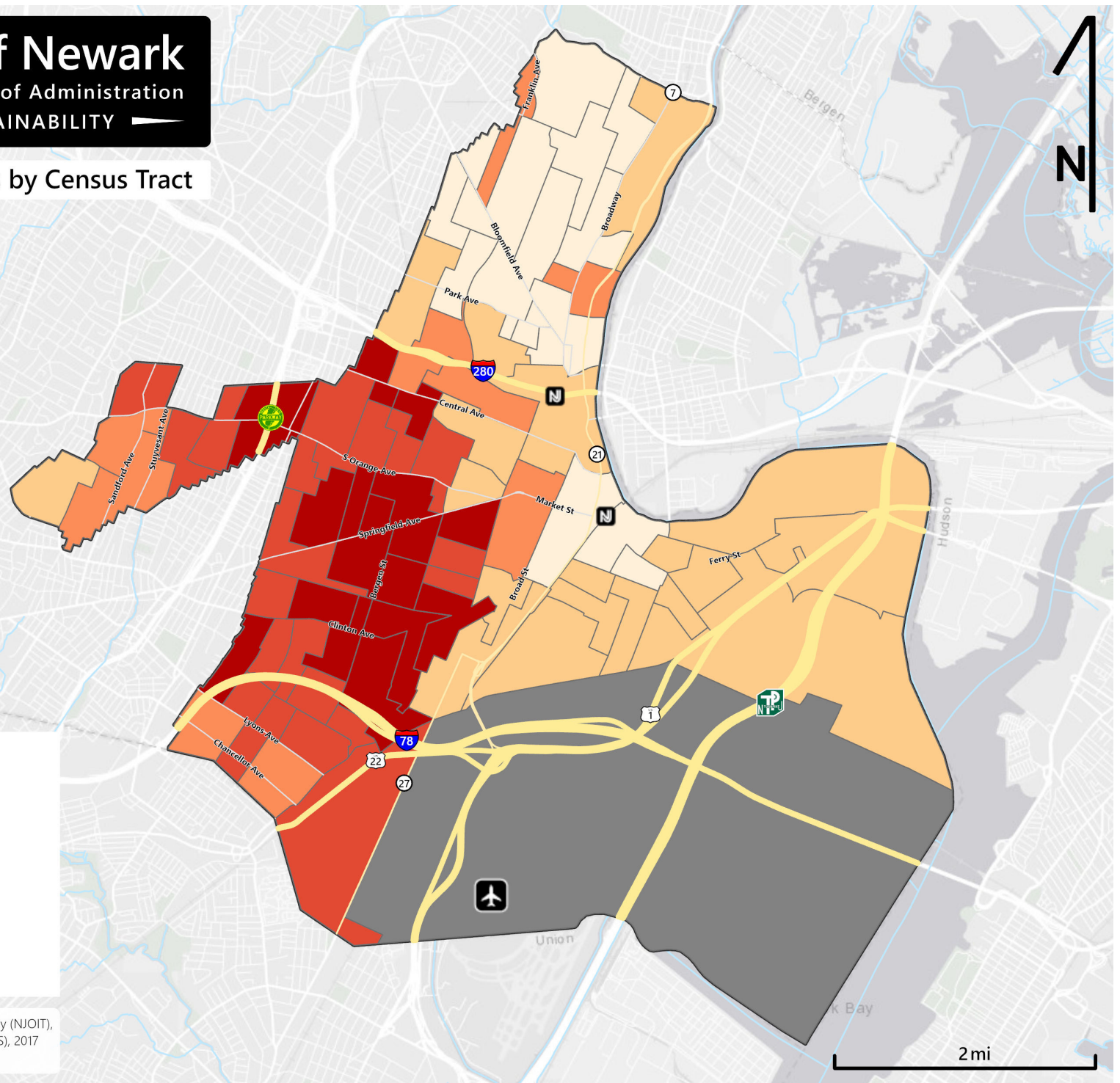
Department of Administration
SUSTAINABILITY

Asthma Rate in Adults by Census Tract

Percent of population in census tract 18 years or older with asthma



Esri, HERE, NPSNJ Office of Information Technology (NJOIT),
Office of Geographic Information Systems (OGIS), 2017
Imagery, Newark Open Data, CDC



ASTHMA

Asthma is a disease in which airways become inflamed, causing them to narrow and swell and produce extra mucus, making it difficult to breathe. Air pollution is associated with both the onset and the exacerbation of asthma. Map 49 shows the percentage of adults with asthma by census tract. While the percentage of adults with asthma in NJ is 9%, the percentage in Newark is 12.9%, with individual census tracts ranging from 9.1% to 14.2%. Higher percentages are found in the South and West Wards.

Childhood Asthma

Although data on asthma in children is not publicly available, a recent academic article shed some light on rates in Newark. Specifically, a map of pediatric asthma emergency department visits by zip code in Newark (plus Irvington and East Orange) was published in an article by Gleason & Fagliano, [*Associations of daily pediatric asthma emergency department visits with air pollution in Newark, NJ*](#); the authors found that ozone was positively associated with pediatric asthma emergency department visits in Newark, NJ (2015).

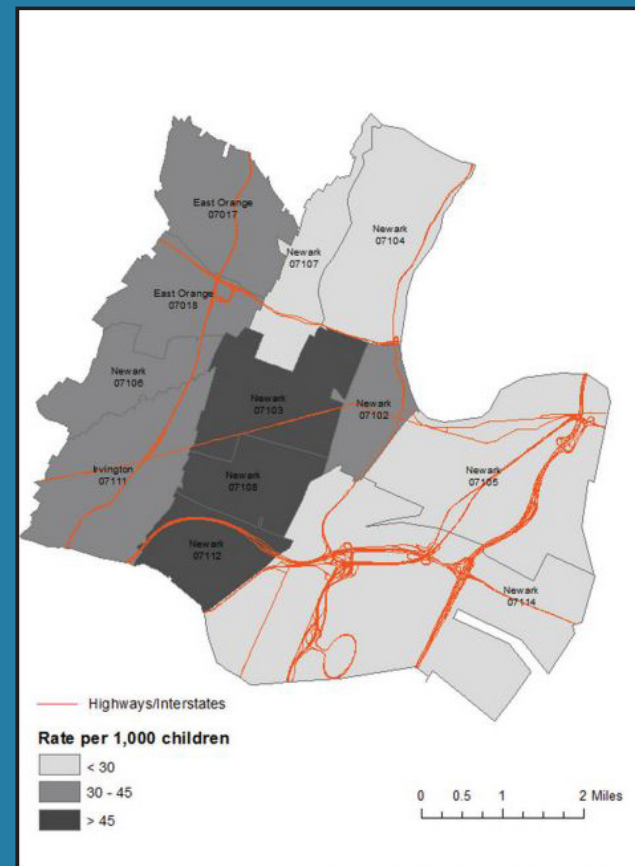


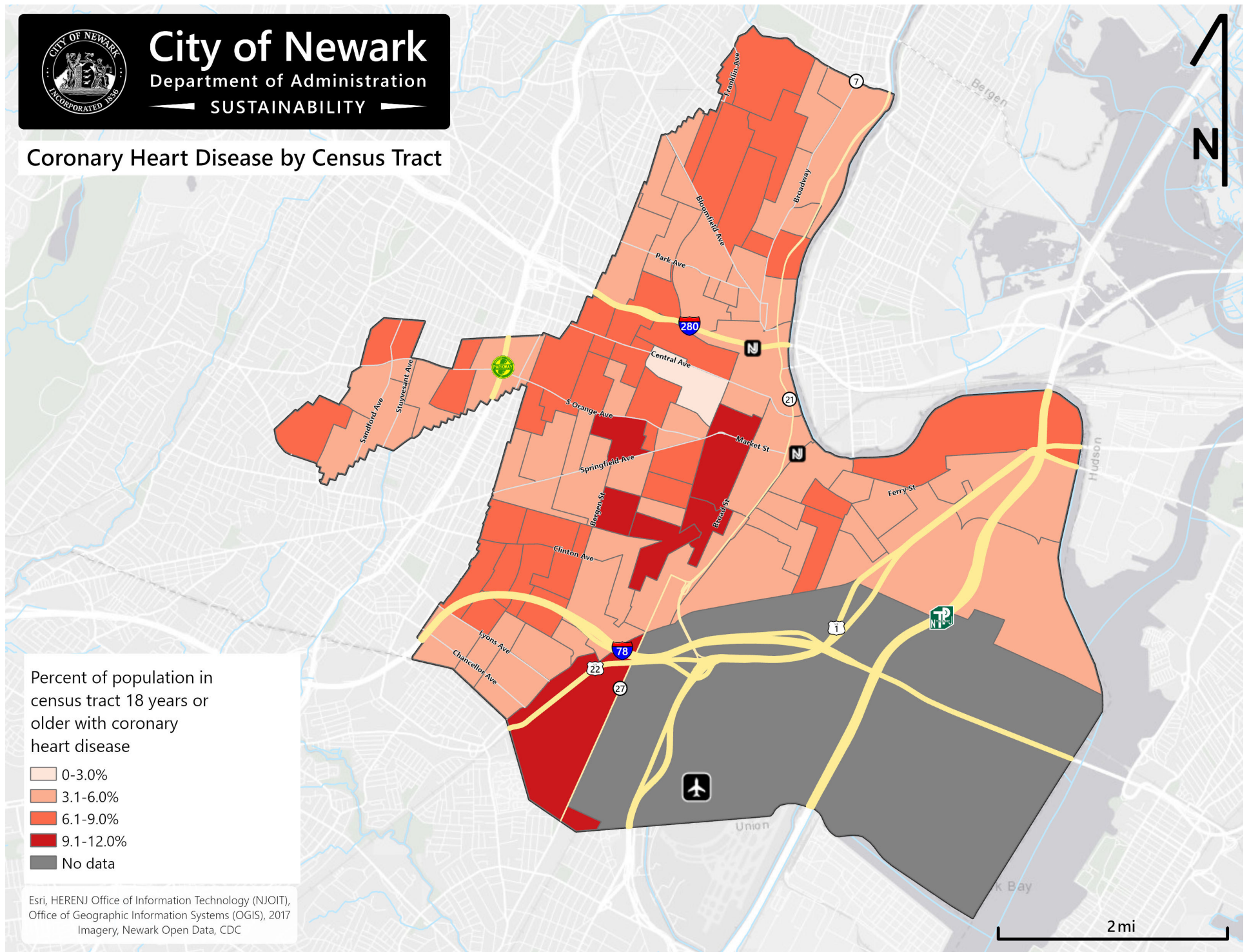
Figure 13: Asthma Rate in Children by Zip Code from Gleason & Fagliano, 2015



City of Newark

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SUSTAINABILITY

Coronary Heart Disease by Census Tract



CORONARY HEART DISEASE

Coronary heart disease develops when the arteries of the heart cannot deliver enough oxygen-rich blood to the heart. It is the leading cause of death in the U.S. While the disease has various causes—including an unhealthy diet, sedentary lifestyle, and smoking—developing coronary heart disease is also associated with prevalence of air pollution. Map 50 shows the percentage of adults with coronary heart disease by census tract. The percentage of adults with coronary heart disease in NJ statewide is 5% compared with 6.4% in Newark. Individual census tracts range from 2.3% to 11.1%, with higher percentages in the South and Central Wards.



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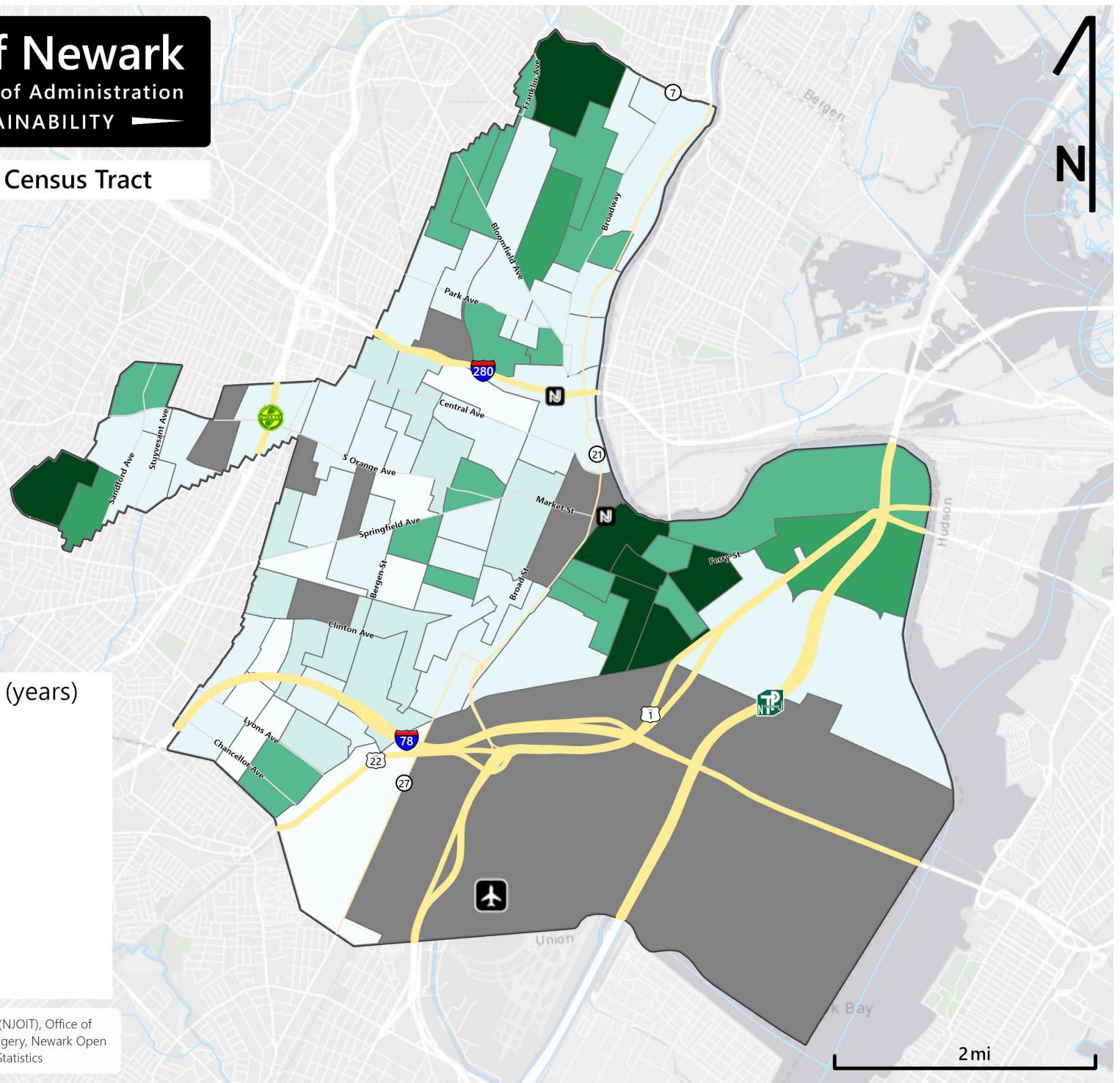
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SUSTAINABILITY

Life Expectancy by Census Tract

Life Expectancy at Birth (years)

- 68-70
- 71-73
- 74-76
- 77-79
- 80-82
- 83-86
- No Data

Esri, HERE/Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, U.S. National Center for Health Statistics



LIFE EXPECTANCY

Map 51 shows life expectancy by census tract in Newark. While the life expectancy overall in NJ is 80.4 years, in Newark overall it is 76, with individual census tracts ranging from 68 to 86 years. Life expectancies are lower in the South and Central Wards.



City of Newark

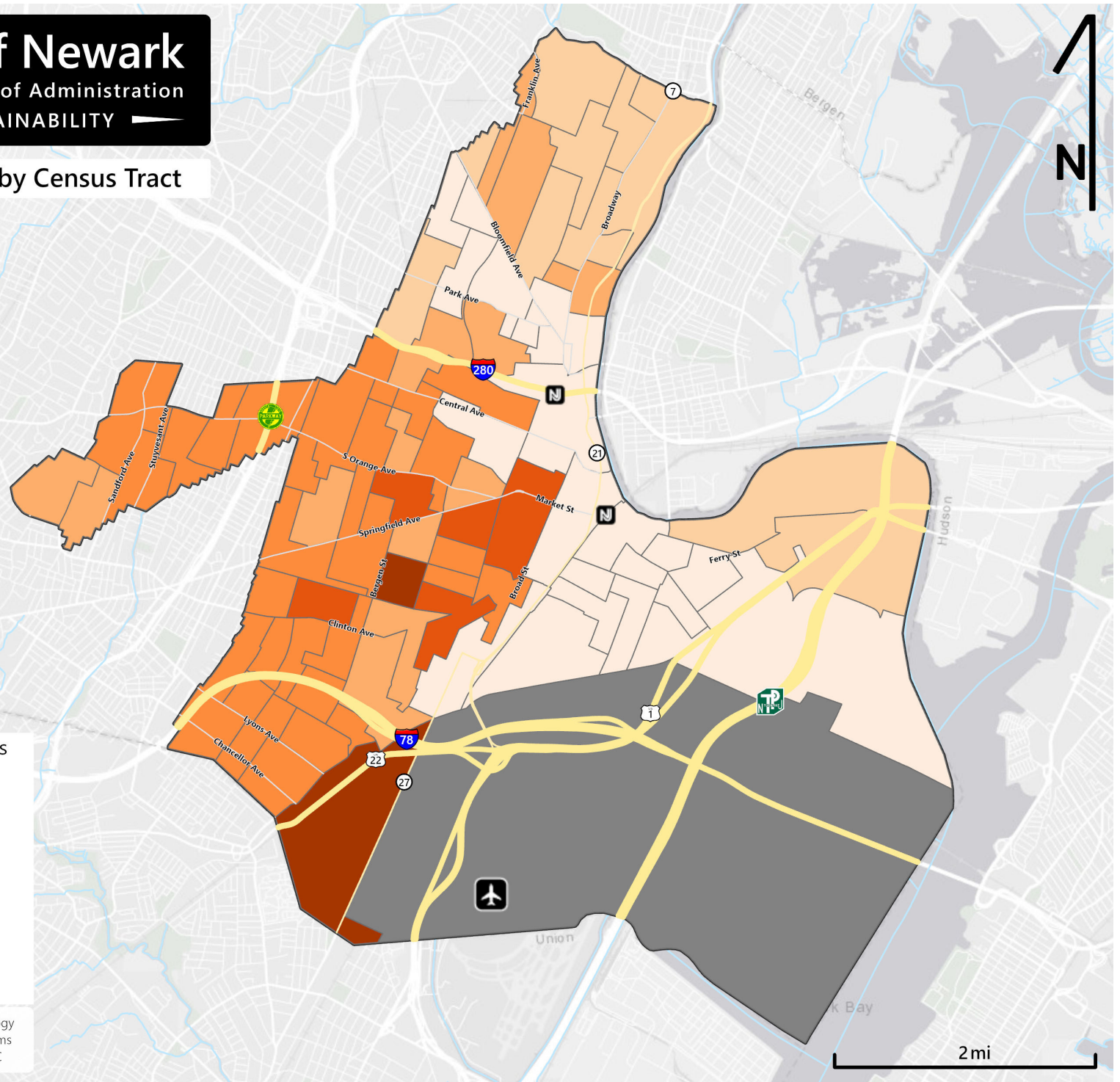
Department of Administration
SUSTAINABILITY

High Blood Pressure by Census Tract

Percent of population in census tract 18 years or older with high blood pressure

- 27-30%
- 31-35%
- 36-40%
- 41-45%
- 46-50%
- 51-53%
- No data

Esri, HERE, NPSNJ Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, CDC



HIGH BLOOD PRESSURE

High blood pressure, also referred to as hypertension, is a condition in which the force of the blood against the artery walls is too high. If left untreated, it can cause heart disease and strokes. Map 52 shows the percentage of adults with high blood pressure by census tract. The percentage of adults with high blood pressure in both Newark and NJ overall is 30%, but individual census tracts across Newark range from 27% to 53%. Higher percentages are in the South, Central, and West Wards.

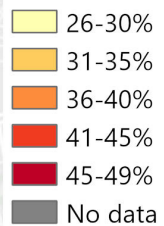


City of Newark

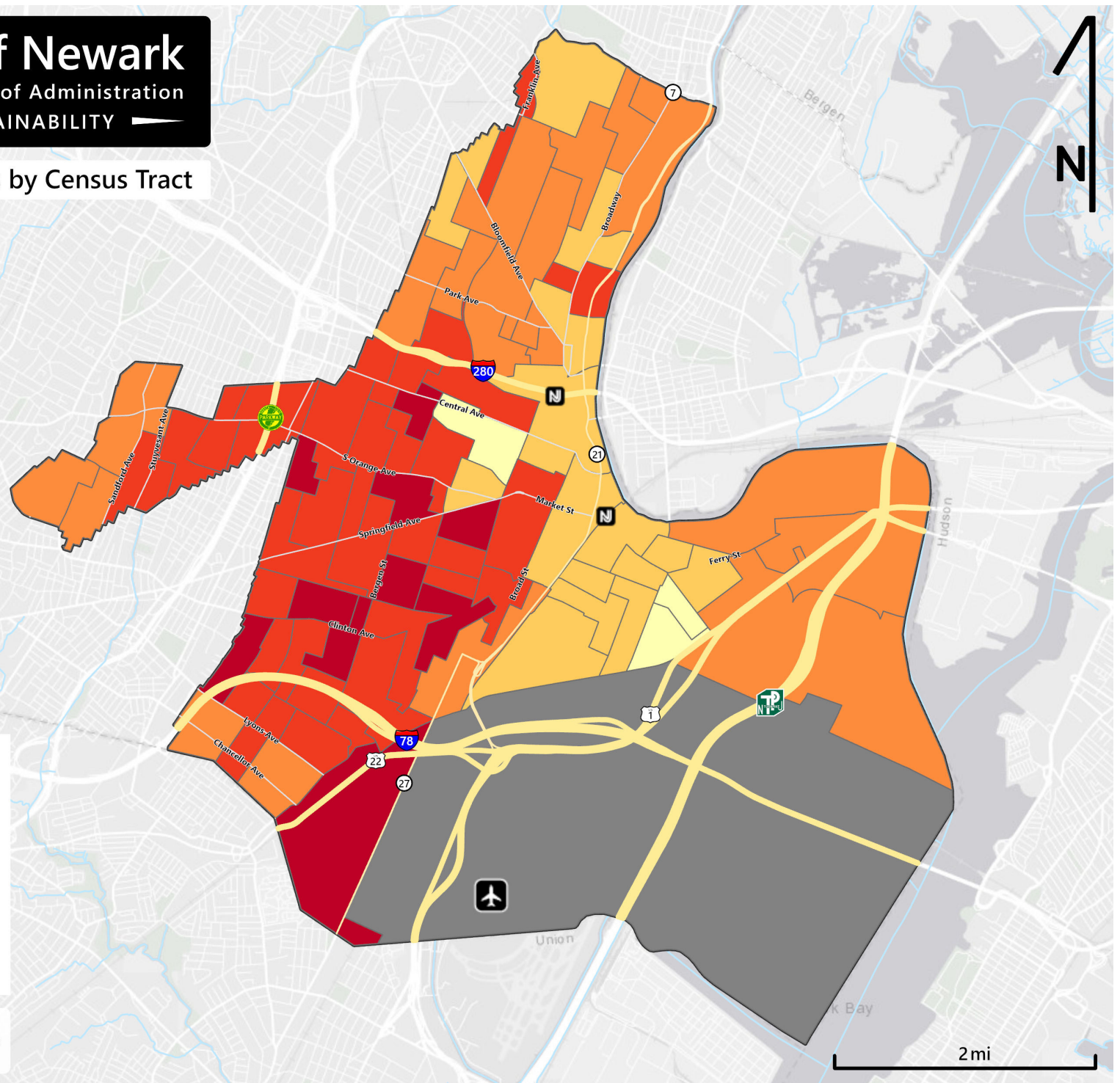
Department of Administration
SUSTAINABILITY

Obesity Rate in Adults by Census Tract

Percent of population in census tract 18 years or older who are obese



Esri, HERE/NT Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, CDC



OBSESITY

Obesity is a condition involving excessive body fat, typically defined as when a person's "body mass index" (see inset) is 30 or greater. Obesity is associated with a variety of health problems and can decrease the efficacy of some medical treatments. Map 53 shows the percentage of adults who are obese by census tract. The percentage of adults who are obese in NJ is 27%, while in Newark it is 32%, with individual census tracts ranging from 26% to 49% (higher percentages in the South, Central, and West Wards). The Believe In A Healthy Newark Steering Committee, a collective impact initiative aimed at addressing social determinants of health in Newark's South and West Wards, estimates that 44.2% of Newark's children are overweight or obese (Believe in a Healthy Newark, 2020).

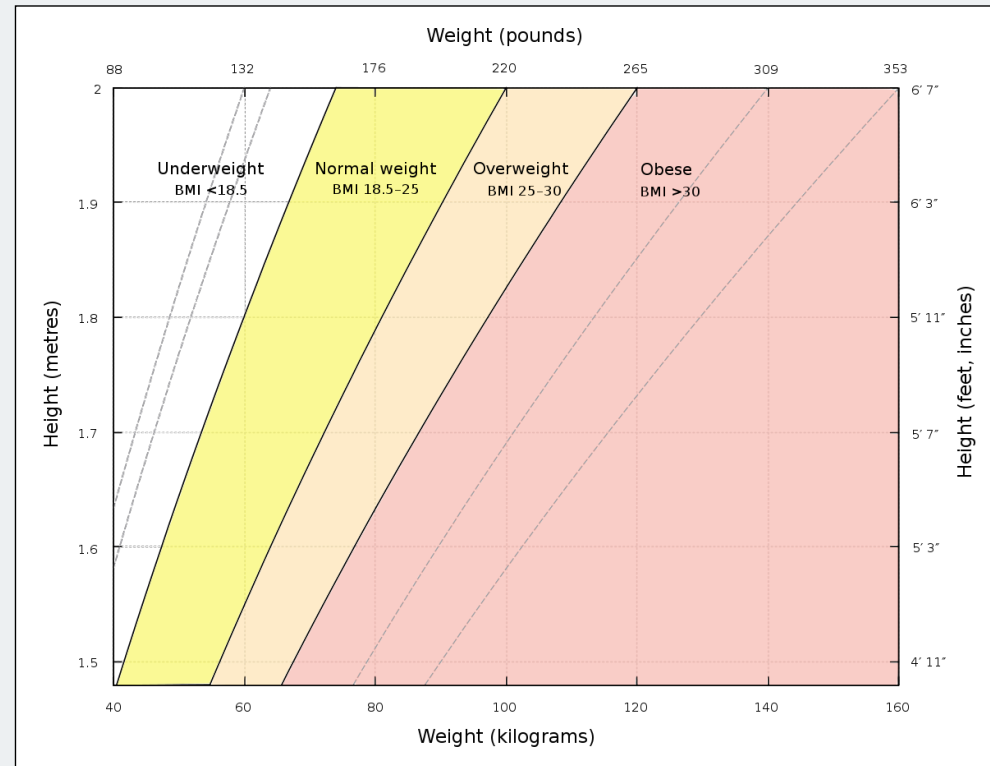


Figure 14: BMI

Body mass index (BMI) was first coined in 1972 by Ancel Keys to measure body fat for population studies. BMI is broadly used to categorize a person as underweight, normal weight, overweight, or obese based on the sum of their tissue mass (i.e., muscle, fat, and bone) and height. While BMI is often used to categorize obesity, it is a flawed measure because it does not directly assess body fat nor does it account for bone density, discriminate between muscle mass and body, or account for the influence of age and sex on these factors. If you'd like to calculate your own BMI, you can use this chart or visit https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm.



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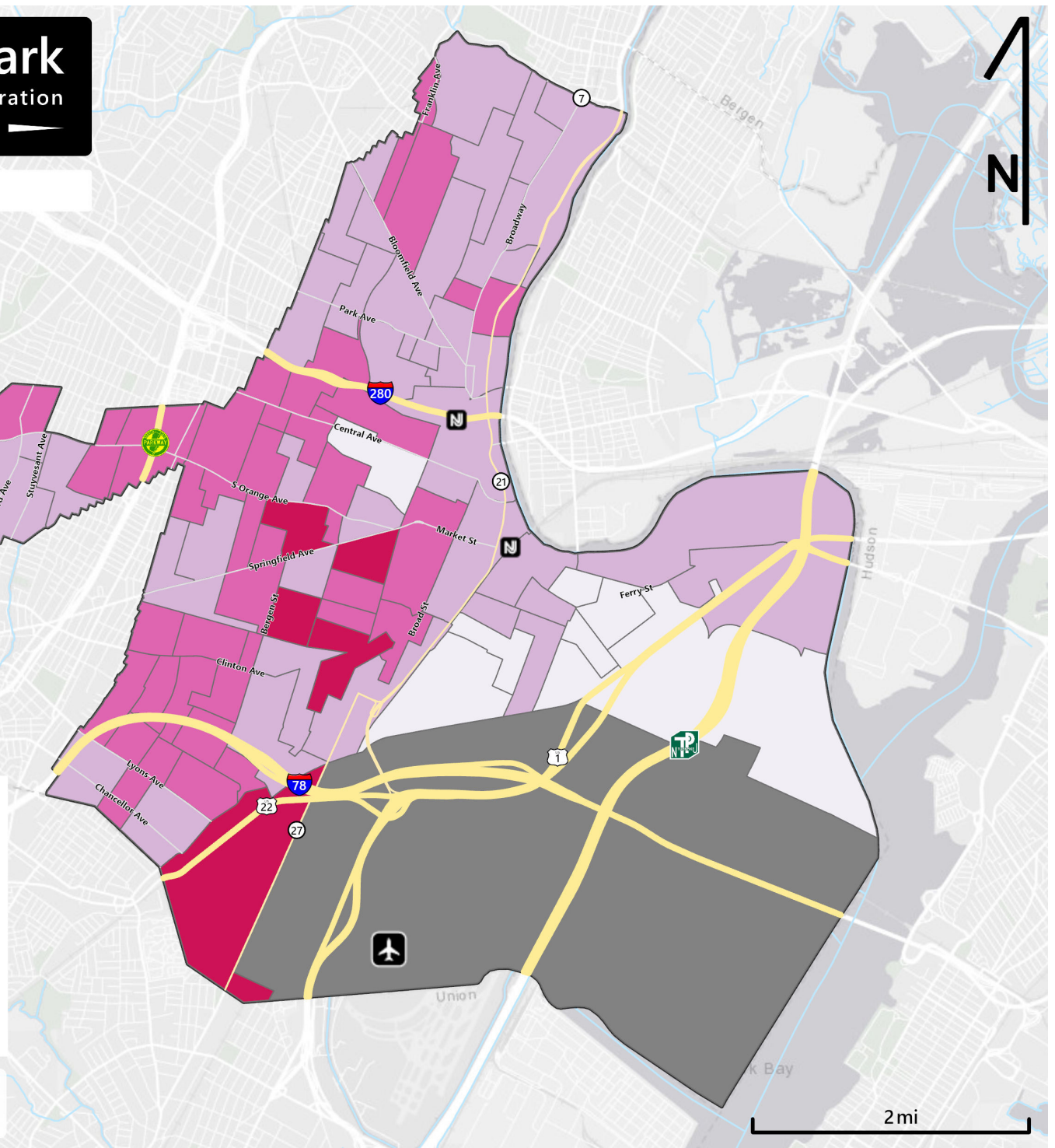
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Diabetes by Census Tract

Percentage of population in census tract 18 years or older with diabetes

- 6-10%
- 13-15%
- 16-20%
- 20-25%
- No data

Esri, HERE/NT Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, 500 Cities Project Data (CDC 2017 1-Year Modeled Estimates)



DIABETES

Diabetes is a disease in which blood sugar levels are too high. Untreated diabetes can lead to nerve damage, heart disease, stroke, and kidney damage. Map 54 shows the percentage of adults with diabetes by census tract. The percentage of adults with diabetes in NJ is 10%, while in Newark it is 11%, with individual census tracts ranging from 6% to 25% (higher percentages in the South and Central Wards).

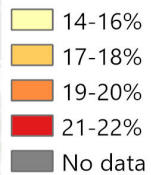


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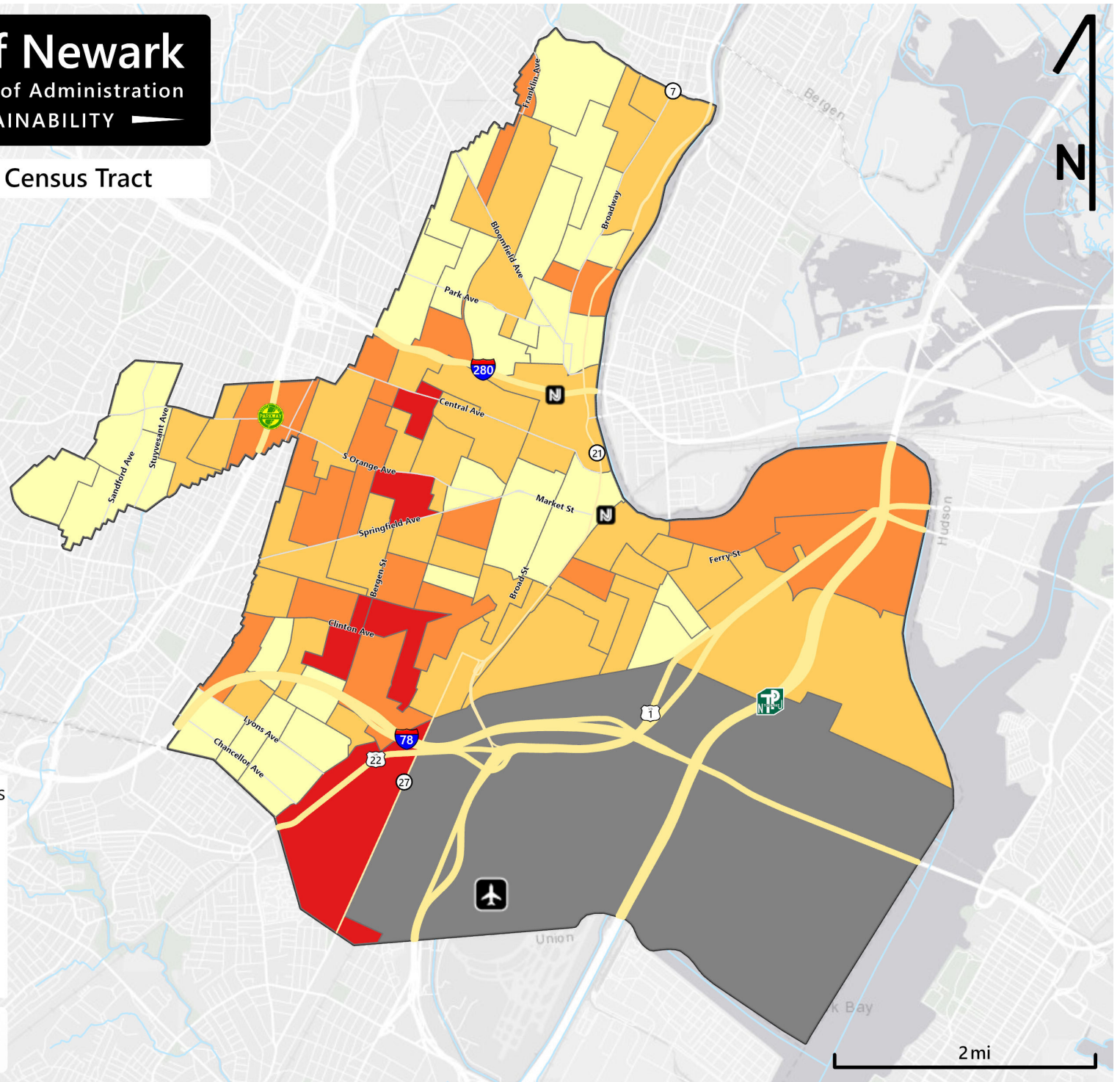
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Mental Distress by Census Tract

Percent of population in census tract 18 years or older who reported poor mental health



Esri, HEREINJ Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, Newark Open Data, CDC



MENTAL DISTRESS

“Frequent mental distress” is defined by adults reporting poor mental health for 14 days or more over the past 30 days, which can be influenced by one’s social, economic, and natural environments. This data comes from the CDC’s 500 Cities Project and represents 1-year modeled estimates based on surveys administered to adults in Newark as a part of the Behavioral Risk Factor Surveillance System in 2017 (United States Centers for Disease Control and Prevention, 2020) in 2017 (United States Centers for Disease Control and Prevention, 2020).

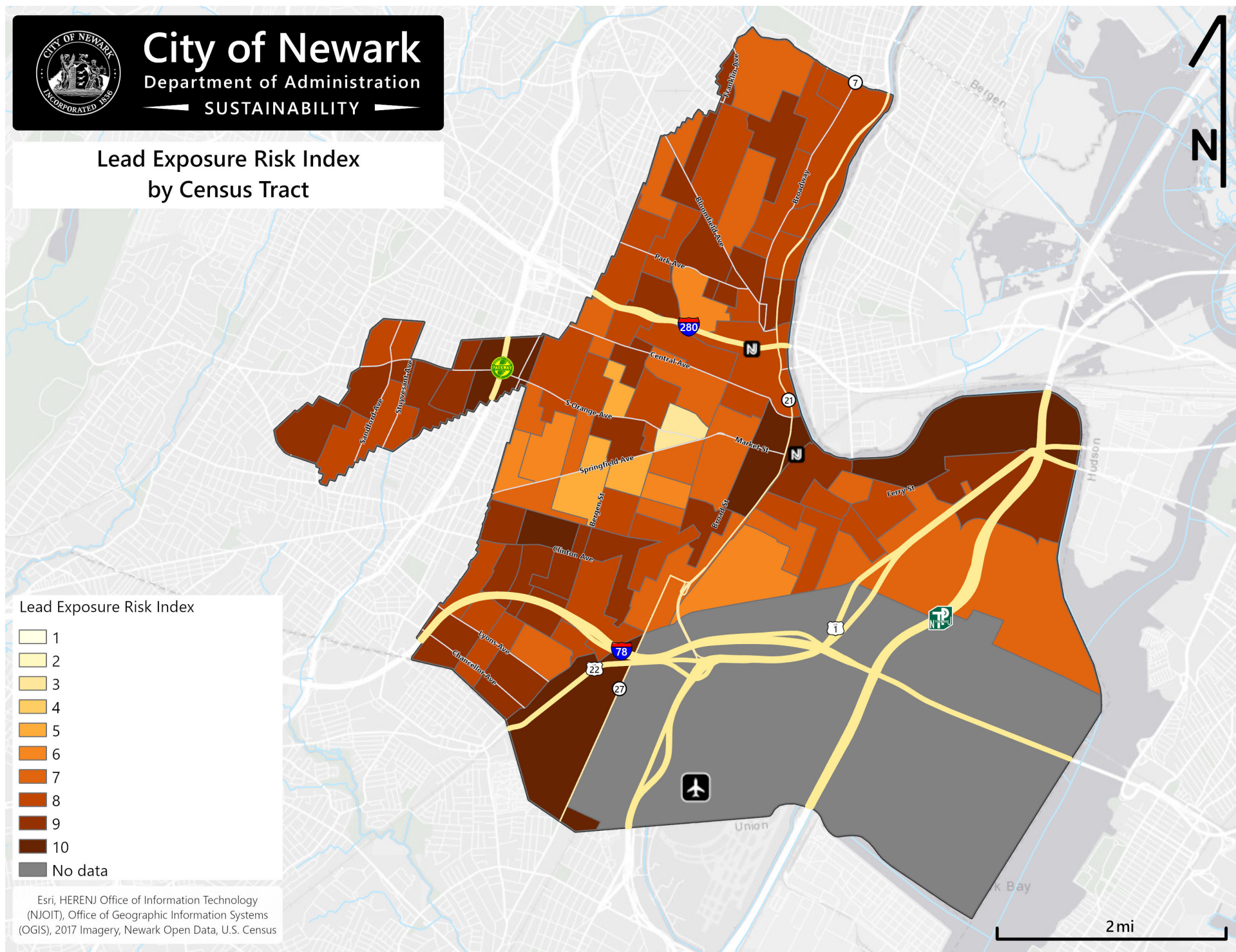
Map 55 shows the percentage of adults with frequent mental distress by census tract. While the percentage of adults with frequent mental distress in Jersey City is 12.9%, in Trenton is 17.9%, and in Camden is 19.7%, in Newark, it is 17.0%, with individual census tracts ranging from 14.0%% to 22.0% (higher percentages in the South and Central Wards).



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Lead Exposure Risk Index by Census Tract



LEAD EXPOSURE RISK

The lead exposure risk index represents the poverty-adjusted risk of being exposed to lead, based on housing characteristics (value ranging from 1-10). Map 56 shows the lead exposure risk index by census tract. The average lead exposure risk index for urban NJ residents is 7.8. The risk index is high throughout Newark, with most census tracts having a value of 7 or higher.

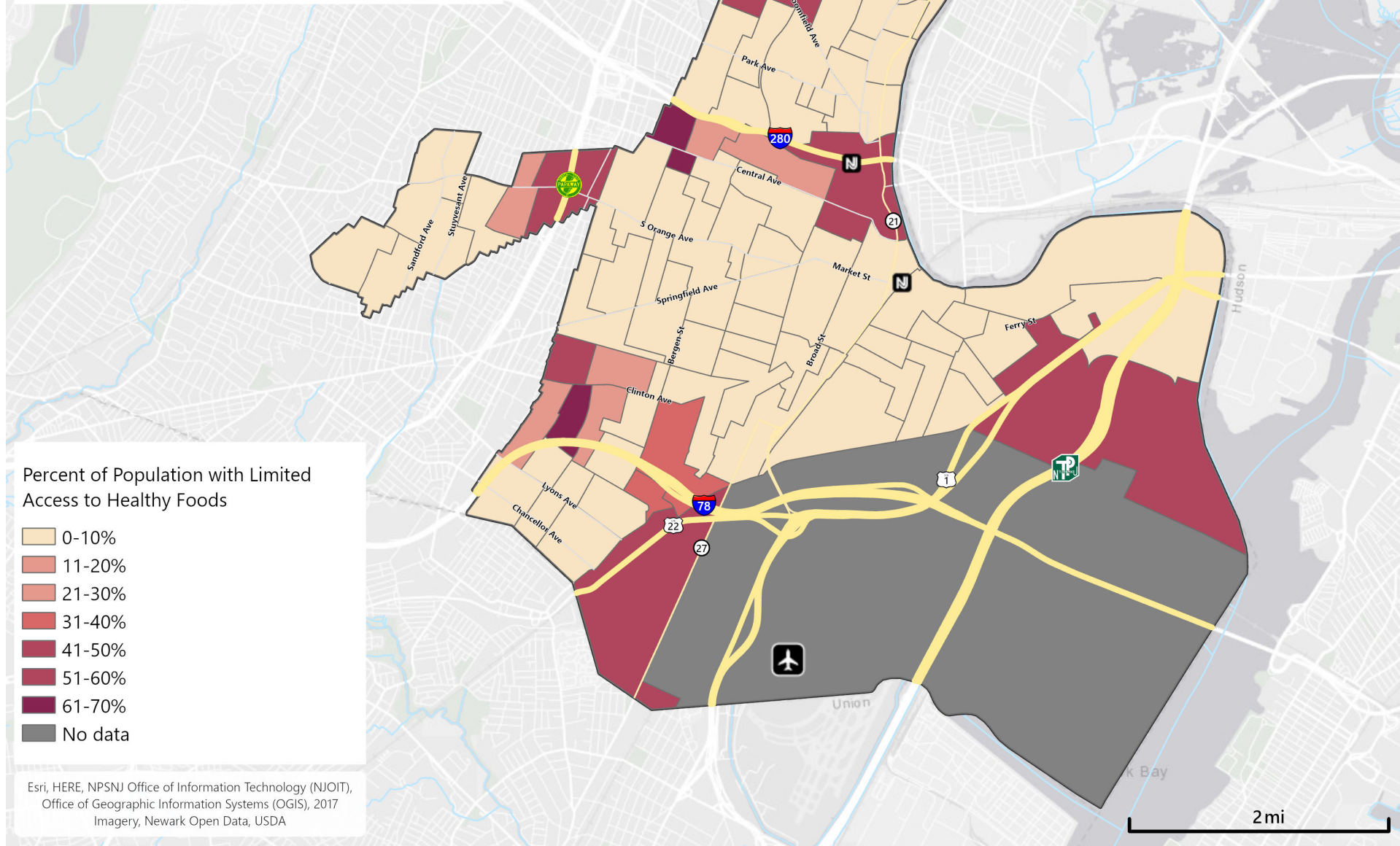


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Limited Access to Healthy Foods by Census Tract



Esri, HERE, NPSNJ Office of Information Technology (NJOIT),
Office of Geographic Information Systems (OGIS), 2017
Imagery, Newark Open Data, USDA

HEALTHY FOOD ACCESS

Having limited access to healthy foods is defined as the percent of individuals living more than a half mile from the nearest supermarket, supercenter, or large grocery store. Map 57 shows the percentage of residents with limited access to healthy foods by census tract. While 58% of urban NJ residents live greater than a half mile from the nearest healthy food store, most of Newark’s census tracts have less than 10% of its residents living this far, with some census tracts in each ward ranging up to 70%.

Health Outcomes with Additional Privacy Protections

Data is not available at the census tract level for these health outcomes; data for the most specific area unit available is provided.

Table 4: Low Birthweight & Lung Cancer Data

Health Outcome	Measure for Newark/ Essex County	Measure for NJ
Low Birthweight	11.0% of infants born to mothers who live in Newark have a birthweight of less than 2500 grams (i.e., ~5 lbs, 8 oz) (New Jersey Department of Health, 2020).	7.9% of infants born to NJ mothers have low birthweight (New Jersey Department of Health, 2020).
Lung Cancer	49.7 per 100,000 people in Essex County develop lung disease each year (New Jersey State Cancer Registry, 2018).	55.3 per 100,000 people in NJ develop lung disease each year (National Cancer Institute, 2018).





PART 4: NATURAL CONDITIONS



CHAPTER 7: GEOLOGY, TOPOGRAPHY, & SOILS

Reviewing the geology, topography, and soils of Newark tells us about how the land underlying the City has evolved over the past several million years, as well as its condition and use today. While most of our city is paved over at the surface, this information can also provide us a sense of how surface contaminants, such as motor oil particles or other pollutants that seep into the ground through stormwater, may travel. This section will review Newark's physiographic regions, bedrock geology, surficial geology, soil series and phases, and elevation.

Readers are encouraged to review information available from the New Jersey Geological and Water Survey (<https://www.state.nj.us/dep/njgs/>) as this offers a larger, and therefore more appropriate, geographic scale at which to understand geological processes and ancient natural history.

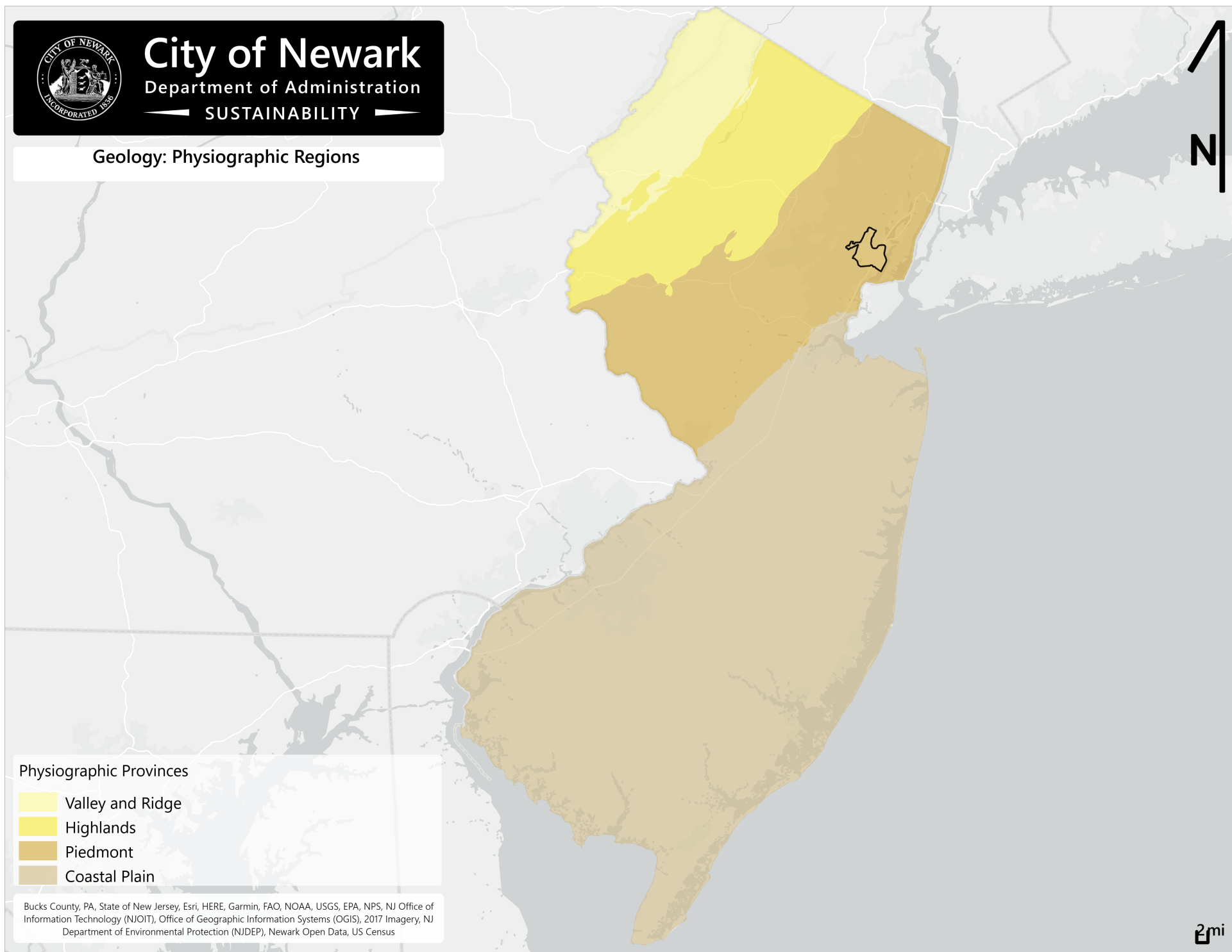


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Geology: Physiographic Regions



7A. GEOLOGY

PHYSIOGRAPHIC PROVINCES

New Jersey can be broken into four physiographic provinces. The province boundaries delineate areas in which geology, rock type sequences, and landforms are distinguished from one another because of the ways in which geological processes—including mountain formation, erosion, and deposition—unfolded over billions of years. Beginning in the northwest of NJ and proceeding southeast, the provinces are called the Valley and Ridge, Highlands, Piedmont, and Coastal Plain Provinces. Newark is completely located within the Piedmont Province, depicted in Map 58.

The Piedmont Province contains mostly low rolling plains divided by a series of higher ridges. The province generally slopes downward from the northwest (adjacent to the Highlands Province) toward the southeast (Newark), where the elevation is approximately 100 feet above sea level. The Palisades are the most prominent feature in the eastern part of the Piedmont Province, with a maximum elevation of 547 feet overlooking the Hudson river and New York City. The highest point of the Piedmont Province in NJ is Barren Ridge at 914 feet, located

near the northwest border of the region in Hunterdon County.

The Piedmont region contains both sedimentary rocks (made of deposited minerals and particles), deposited during the Triassic and Jurassic periods, as well as igneous rocks (rocks of volcanic origin) from the Jurassic period. As such, the Piedmont region's geology is between 240 to 140 million years old ago (Dalton, 2003).

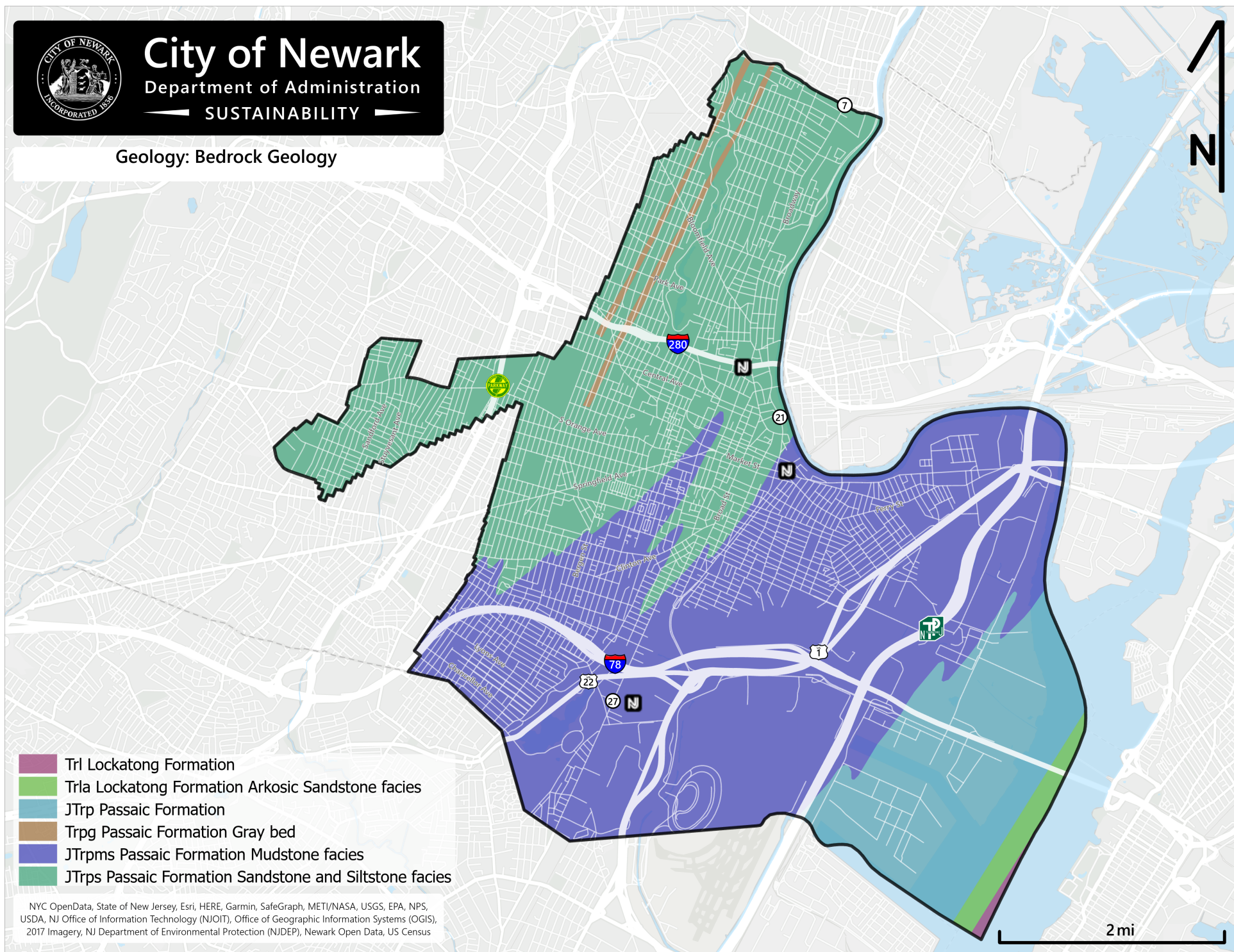


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Geology: Bedrock Geology



BEDROCK GEOLOGY

Newark sits atop the Passaic Formation, a unit of bedrock geology that stretches across New Jersey, New York, and Pennsylvania (see Map 58)—a bedrock characterized by reddish-brown siltstone and sandstones dropped by streams and rivers running through the Appalachian Mountains during the Mesozoic Era, 248 to 65 million years ago.

The rivers dropped larger particles (e.g., boulders and rocks) close to the mountains and carried finer particles (e.g., fine sands and clays), as they reached flat areas where the water slowed. With time and pressure, these deposits became the sedimentary rock of the Passaic Formation (Olsen, 1980). Four different “stratigraphic units” (bodies of rock defined by their fossil content or time span) within the Passaic Formation are located within Newark, as shown in Map 59. Table 5 describes their primary physical characteristics.

Table 5: Bedrock Geology of the Passaic Formation

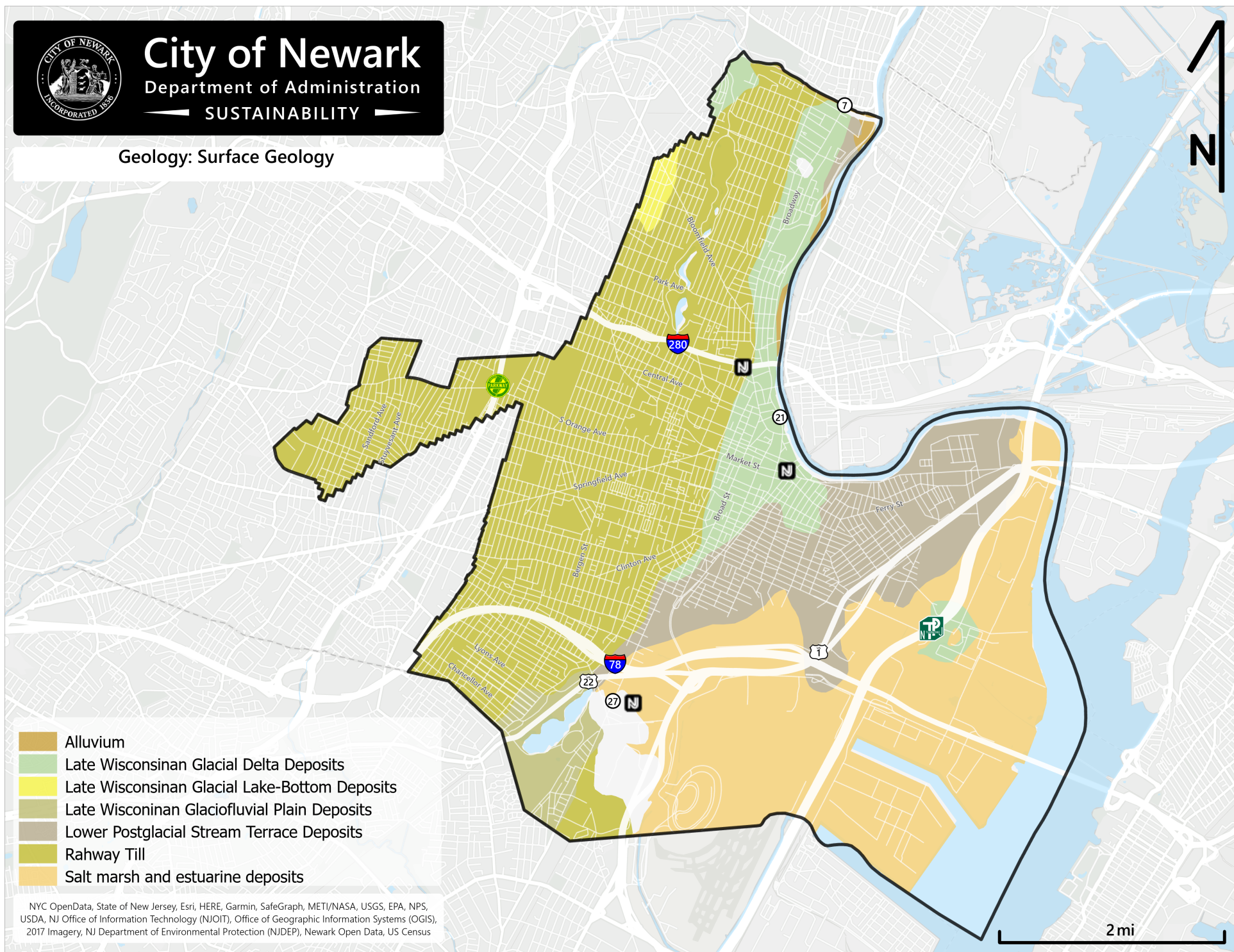
Abbr.	Geographic Formation	Lithology	% of City
JTrpms	Passaic Formation Mudstone Facies	Sandy mudstone (JTrpms) is reddish-brown to brownish-red, massive, silty to sandy mudstone and siltstone, which are bioturbated, ripple cross-laminated and interbedded with lenticular sandstone. To southwest where similar lithologic units also occur, they have not been mapped separately, but have been included in undivided unit JTrp.	52.3%
JTrps	Passaic Formation Sandstone & Siltstone Facies	Sandstone (JTrps) is interbedded grayish-red to brownish-red, medium- to fine-grained, medium- to thick-bedded sandstone and brownish-to-purplish-red coarse-grained siltstone; unit is planar to ripple cross-laminated, fissile, locally calcareous, containing desiccation cracks and root casts. Upward-fining cycles are 6-15 ft thick. Sandstone beds are coarser and thicker near conglomerate units (JTrpcq, JTrpcl). Maximum thickness about 3,610 ft.	36.4%
Jtrp	Passaic Formation	Predominantly red beds (10- to 23-ft-thick) consisting of argillaceous siltstone; silty mudstone; argillaceous, very fine-grained sandstone; and shale; mostly reddish-brown to brownish-purple, and grayish-red. Thickness of the formation between Sourland Mountain and Sand Brook syncline is about 11,483.	9.7%
Trpg	Passaic Formation Gray Bed	Gray to black silty mudstone, gray and greenish- to purplish-gray argillaceous siltstone, black shale, and medium- to dark gray, argillaceous, fine-grained sandstone and are abundant in the lower half of the Passaic Formation. Several lakebed sequences consisting of one or two thick groups of drab-colored beds as much as 98 ft thick or more can be traced over miles. Many gray-bed sequences are locally correlated within fault blocks; some can be correlated across major faults or intrusive rock units. Thickness of the (entire Passaic) formation between Sourland Mountain and Sand Brook syncline is about 3,500 m (11,483 ft).	1.4%



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Geology: Surface Geology



SURFICIAL GEOLOGY

Surficial materials are sediments sitting on top of bedrock. They are the parent material for soils. As these materials disintegrate, they form soil. They are differentiated by grain size, mineral composition, bedding, physical properties, and where they are located, as described in Table 6. Map 60 details how the surficial geology varies across the City of Newark. The most common surficial materials in Newark are Rahway Till (a mix of pebbles and cobbles in sandy-silty soils, making up nearly all of the Western half of the City) and Salt-Marsh Estuarine deposits (clays and silty soils along approximately one-third of Newark, near the Passaic River and the Newark Bay).

Table 6: Lithology of Surficial Geology

Deposit Type	Lithology	% of City
Rahway Till	Reddish-brown, light reddish-brown, reddish-yellow, silty sand to sandy silt containing some to many subrounded and subangular pebbles and cobbles and few subrounded boulders. As much as 90 feet thick but generally 20 feet thick.	39.03%
Salt Marsh & Estuarine	Organic silt and clay, and peat, with some sand and fine gravel; black, dark-brown, and dark-gray. As much as 25 feet thick.	33.77%
Glacial Delta Deposit	Fine-to-coarse sand and pebble-to-cobble gravel, some silt. As much as 80 feet thick.	11.56%
Lower Passaic Terrace	Fine-to-coarse sand, some silt and pebble gravel; light reddish-brown, light gray, very pale brown. Stratified. As much as 40 feet thick.	10.7%
Glacial Deposit	Fine-to-coarse sand, minor silt; reddish- reddish brown, gray; and pebble-to-coarse-cobble gravel. well sorted. As much as 150 feet thick. Well sorted. As much as 150 feet thick. well sorted. As much as 150 feet thick.	2.73%
Swamp Deposit	Organic silt and clay, and peat. As much as 10 feet thick. The deposits are inferred from historical maps and are now entirely covered by fill.	1.12%
Alluvium	Sand, silt, minor gravel and clay; dark brown, grey, reddish-brown; as much as 30 feet thick.	0.59%
Glacial Lake Bottom Deposit	Silt, fine sand, clay. As much as 50 feet thick.	0.47%
Bedrock Outcrop	May be partly covered by fill or construction.	0.04%

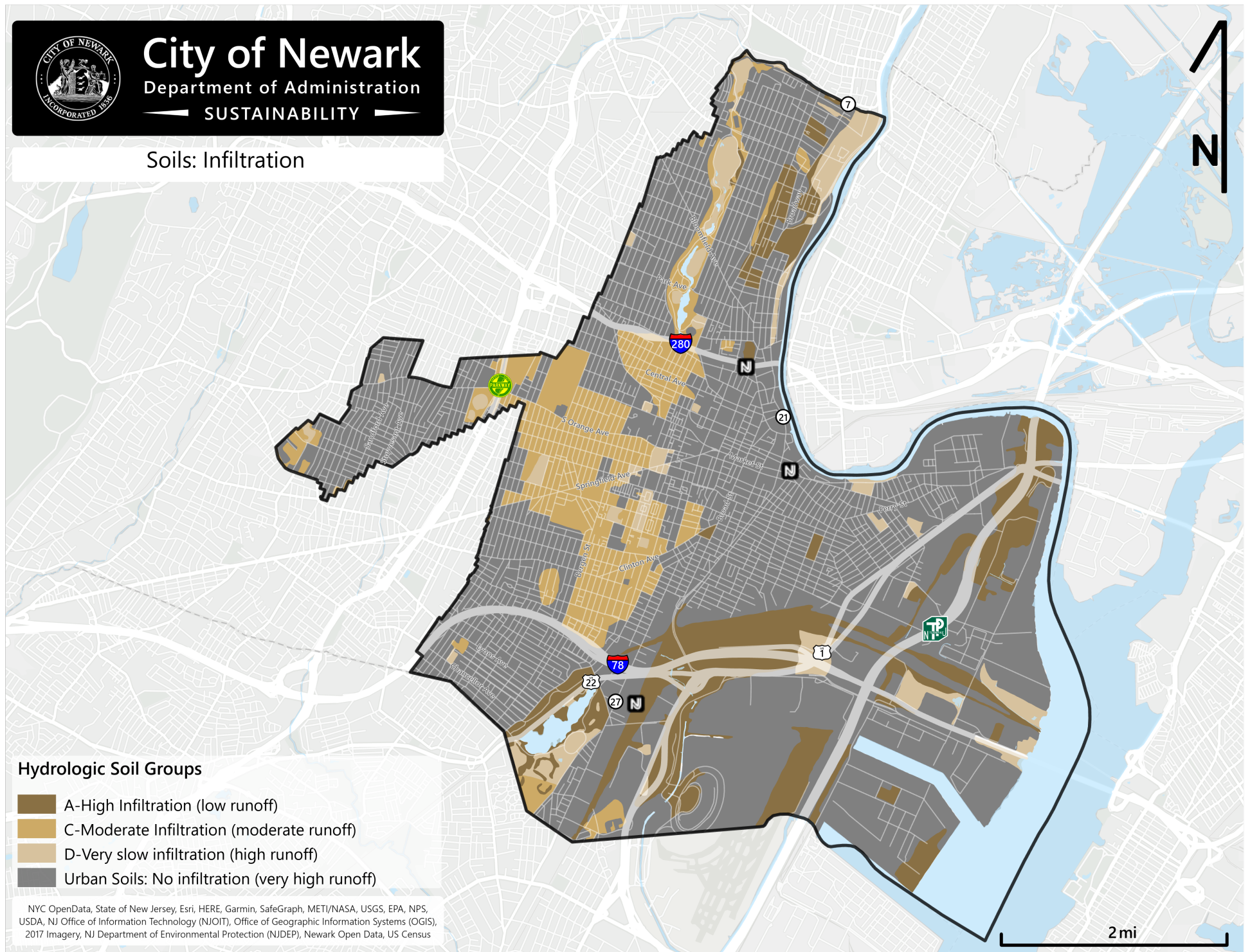


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Soils: Infiltration



7B. SOILS

SOILS

Soil is the foundation for all land uses. It is a natural resource that cannot be replenished on the human time scale. Soil properties affect everything, from the vegetation, to location of wells and septic facilities. Soils are classified by “soil series,” which separate dominant soil types by their texture, slope, stoniness, and other characteristics that affect their use. Soil series are further broken into variations called soil phases, which are often named to indicate the features that affect use and management (Muniz & Shaw, 2007).

Newark soils consist of 11 series types and 34 phases within those series. Maps 62 and 63 show the soil types and Table 5 lists the descriptions of soil series in Newark. Of the eleven Soil Series that appear in Newark, the Boonton, Bigapple, and Dunellen Series are the most common.

Historic fill is “non-indigenous material placed on a site in order to raise the topographic elevation of the site” (New Jersey Department of Environmental Protection, 2018). The inset map in Map 62 shows historic fill that covers more than 5 continuous acres. Historic fill was

Table 7: Soil series in Newark

Series name	Description
The Boonton Series	The Boonton Series is the most common soil series and covers about 38% of Newark’s land area. It consists of deep, moderately well drained coarse-loamy, mixed soils. Boonton Series soils were generally formed from glacial till (see Map 54), and consist of mostly red to brown shale, sandstone, basalt, and some granitic gneiss.
The Bigapple Series	The Bigapple Series covers about 28% of Newark’s land area. It consists of very deep, well-drained soils. Bigapple Series soils were formed in thick deposits of dredged materials (i.e., clay and sand scraped from the bottom coastal waterways and rivers and sprinkled around the region to support urbanization and development across New York and New Jersey in the last few centuries) and can be up to 40 inches thick.
The Dunellen Series	The Dunellen Series covers about 21% of Newark’s land area. It consists of very deep, well-drained soils formed in stratified materials on outwash plains (i.e., plains formed from sediments deposited by meltwater at the end of glaciers). Underlying bedrock is red, soft shale or siltstone.

used along industrial waterfront areas of New Jersey to raise the elevation of a site. Often, this involved filling wetlands and shallow waterways. These areas tend to be prone to flooding and may contribute to potential contamination depending on the fill material (New Jersey Department of Environmental Protection, 2013).



City of Newark

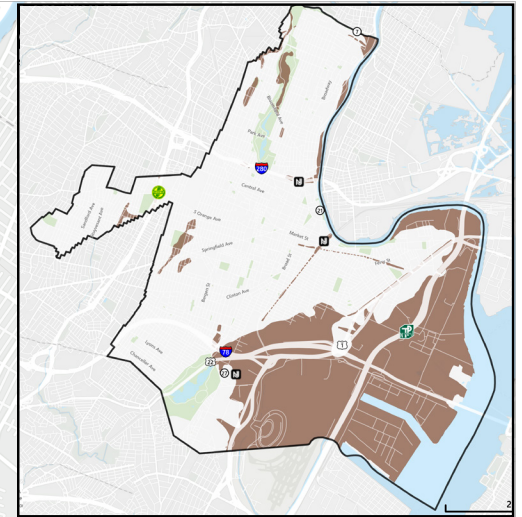
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Soil Series

- Bigapple Series
- Boonton Series
- Dunellen Series
- Fluvaquents
- Rock outcrop
- Rikers loamy sand
- Tunkhannock Series
- Urban land, Dunellen substratum
- Urban land, Bigapple substratum
- Urban land, Boonton substratum
- Urban land, loamy fill substratum

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



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City of Newark

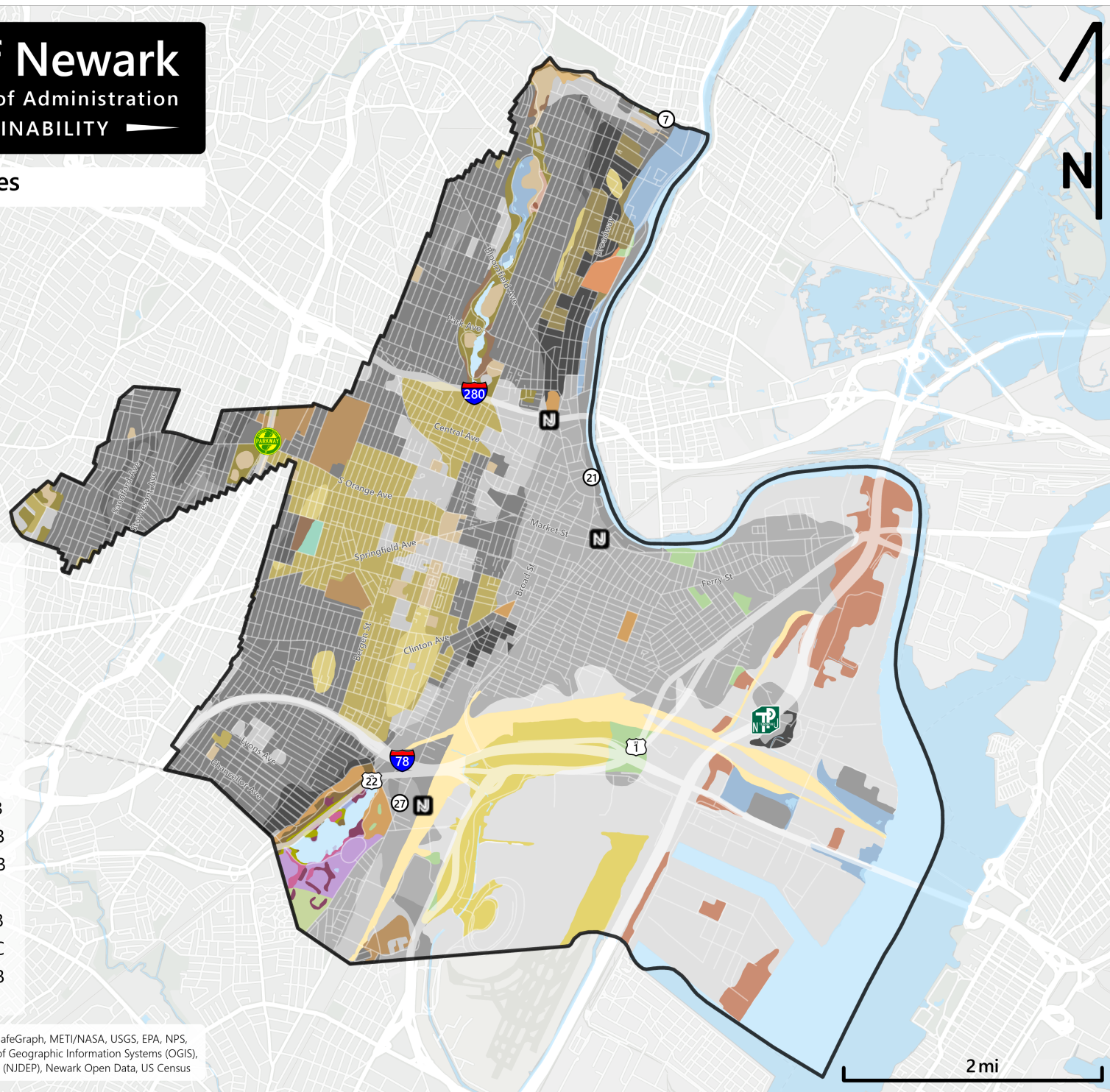
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Soil Phases

BhgA	TunkE
BhguA	UcdAt
BooB	UdbooB
BooBc	TunudB
BooC	UddunB
BotB	UdhalB
BowrB	UdkttB
BowrC	UdrkkB
DunB	UdtunB
DusB	URBHGB
DuuB	URBOOB
FmhAt	URDUNB
RNAAC	URKTTB
RkkcA	USBOOB
TunkB	USBOOC
TunkC	USDUNB
TunkD	

NYC OpenData, State of New Jersey, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NJ Office of Information Technology (NJ/OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census



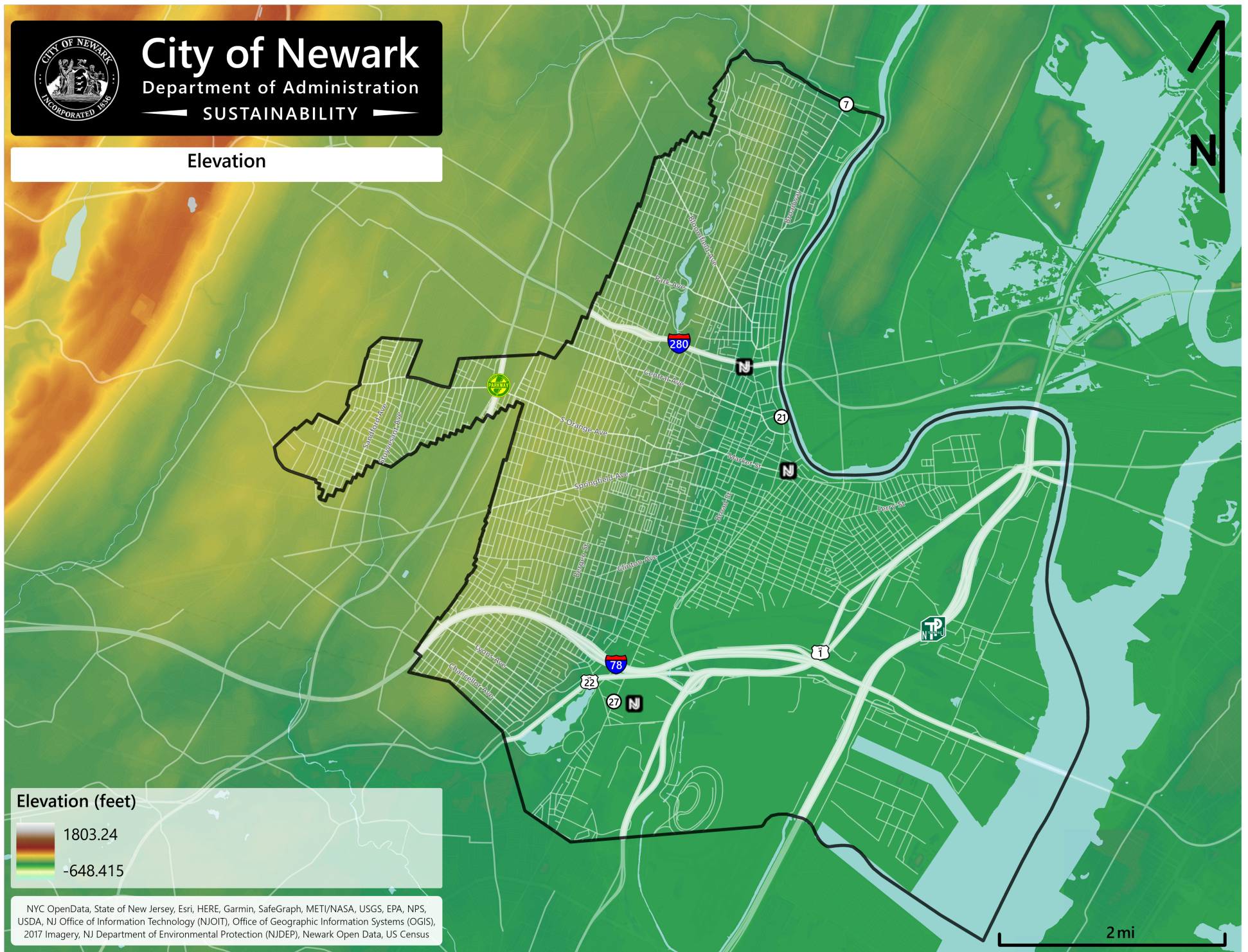


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Elevation



7C. TOPOGRAPHY

ELEVATION

Newark's elevation (topography) ranges from sea level in the East Ward to about 260 feet along the City's western boundary. Map 64 shows the shaded topography of the area. The East Ward is relatively flat ranging from sea level to about 50 feet of elevation. Because of the low elevation and relatively flat topography, about 55.2% of the East Ward is in a flood zone (making up 26.5% of Newark). The floodplain is shown in Map 64 and will be discussed in more detail in the following section on Hydrology.

The North, West, Central, and South Wards have greater topographic relief, with fewer flat areas, and more variable elevation—as many Newark cyclists will attest. The high points delineate the boundaries of watersheds seen in Map 66. Most of Newark has a slope of less than 10 percent.



CHAPTER 8: HYDROLOGY

Hydrology is the study of one of the most valuable resources on earth: water. Water is important for human consumption as drinking water and as a key raw material needed for irrigation, food production, manufacturing, research, recreation, and many other facets of human life—to say nothing of the importance of water for healthy ecosystems and habitat. Each of these uses can be severely impaired by pollution. In this section, we review several water features in Newark including surface water, watersheds, and flood zones.

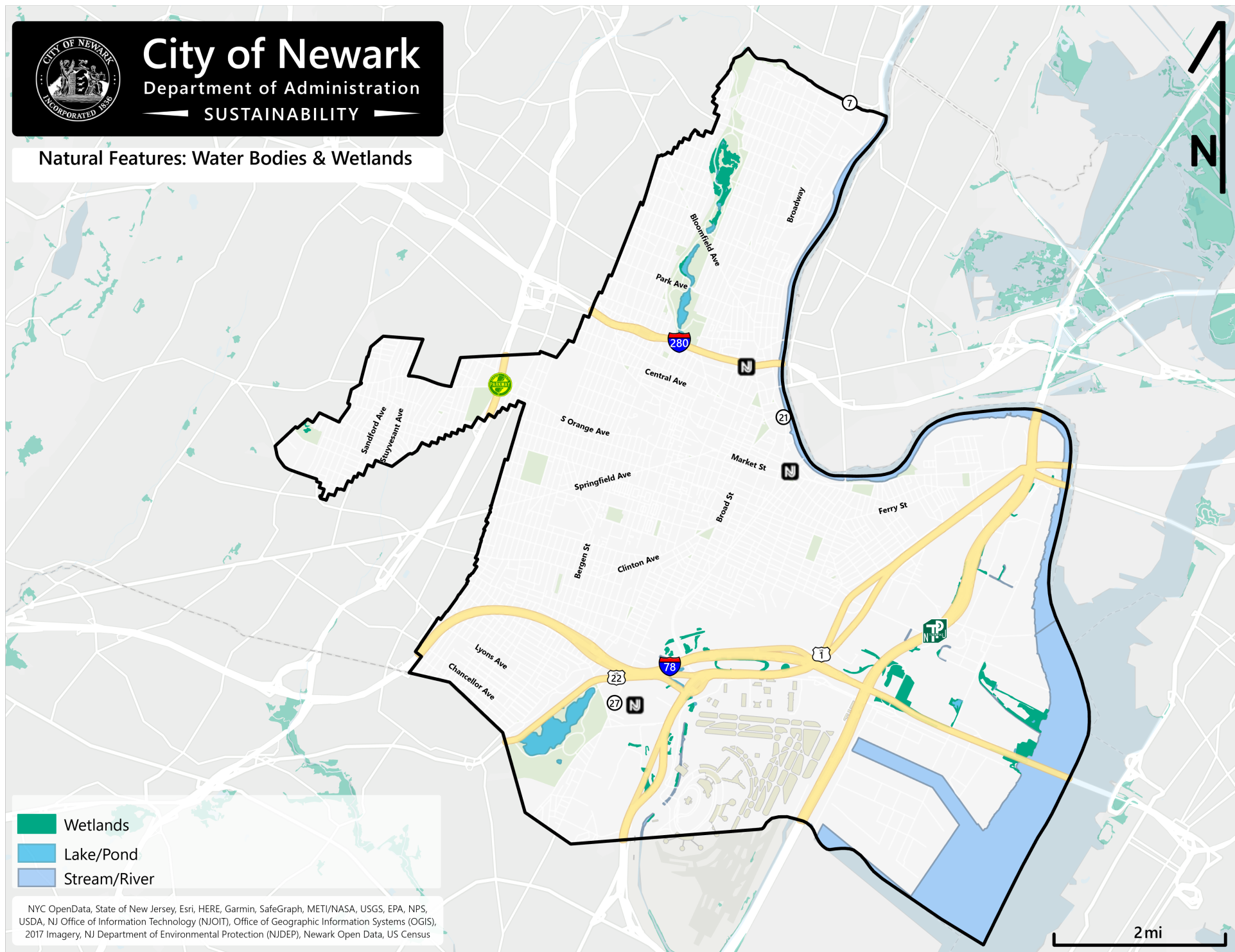


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Natural Features: Water Bodies & Wetlands



WATER BODIES & WETLANDS

Newark has a variety of surface water bodies including rivers, streams, tidal rivers, and artificial lakes. Newark is situated at the mouth of the Lower Passaic River, where it drains into Newark Bay, and bordered by the Passaic River along the northeast. There are two major lakes in Newark: Weequahic Lake in Weequahic Park and Branch Brook Lake in Branch Brook Park. The surface waters of Newark are shown in Map 65.

Wetlands are defined as areas where water is at or near the soil surface at least part of the year. Wetlands provide important ecosystem services like flood protection and habitat provision. There are approximately 170 acres of wetlands in Newark (about twice the area of a large shopping mall). While modern environmental regulations prevent the filling of wetlands, historic removal of wetlands has made certain areas of Newark more susceptible to flooding events and other storm-related damages (United States Fish and Wildlife Service, 2005).

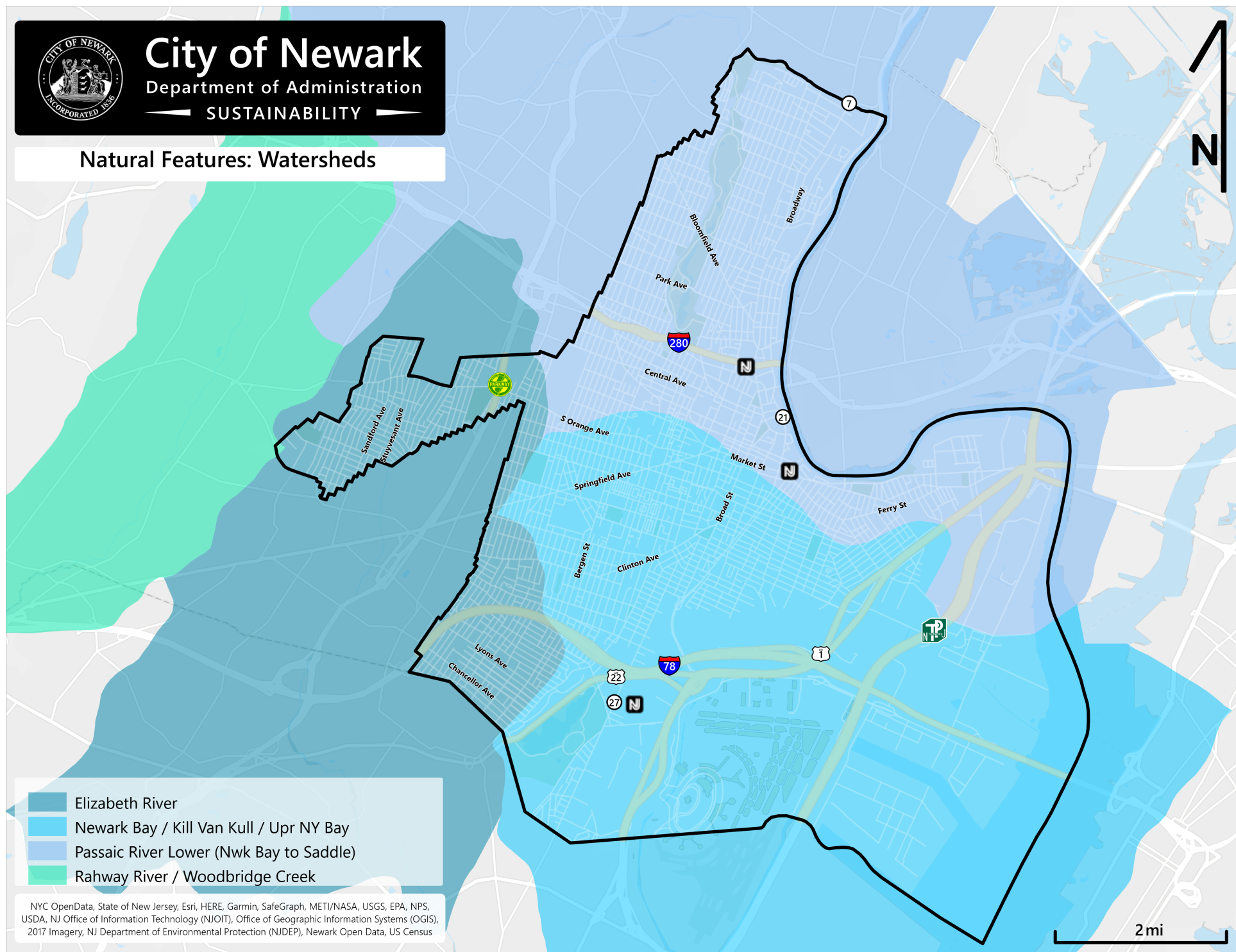


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Natural Features: Watersheds



WATERSHEDS

A watershed is an area of land surface that drains into a given waterway. The NJDEP has divided the state’s watersheds into 20 different Watershed Management Areas (WMA) in an effort to promote the protection and conservation of water resources more effectively, following naturally occurring boundaries rather than municipal and county borders. The City of Newark lies between two Watershed Management Areas (detailed below), which include four sub-watersheds, depicted in Map 66. According to the EPA’s “How’s My Waterway” mapping application, all of Newark’s watersheds are considered impaired in one or more of the Clean Water Act’s basic tenets of ensuring waters are swimmable, drinkable, and fishable for all. More detailed information for each watershed can be found at www.mywaterway.epa.gov.

Table 8: Watershed and Subwatershed Descriptions

WMA Name	Subwatersheds	Description
WMA 4	1. Passaic River Lower (Nwk Bay to Saddle)	The WMA 4 has a total drainage area of 180 square miles, about 8 square miles of which are located within Newark’s land area. The watershed lies within portions of the Passaic, Essex, Hudson, Morris, and Bergen Counties. Most of the lower part of the watershed is highly urbanized, with several point source and non-point source contributions of contamination. As a result, the water quality is poor (New Jersey Office of Emergency Management, 2019).
WMA 7: Arthur Kill	1. Rahway River/ Woodbridge Creek 2. Newark Bay / Kill Van Kull / Upper NY Bay 3. Elizabeth River	The WMA 7 covers a total area of 180 square miles, 16.2 square miles of which are located within Newark. The watershed is within Essex, Union, and Middlesex counties. As with WMA 4, described above, the highly urbanized nature of this region has resulted in considerable channelization. In parts of Newark, the Elizabeth River would look more like a pipe than a river to the naked eye. Several sites in WMA7 are permitted to discharge contaminants or hazardous waste are located along these water bodies, negatively affecting their water quality.

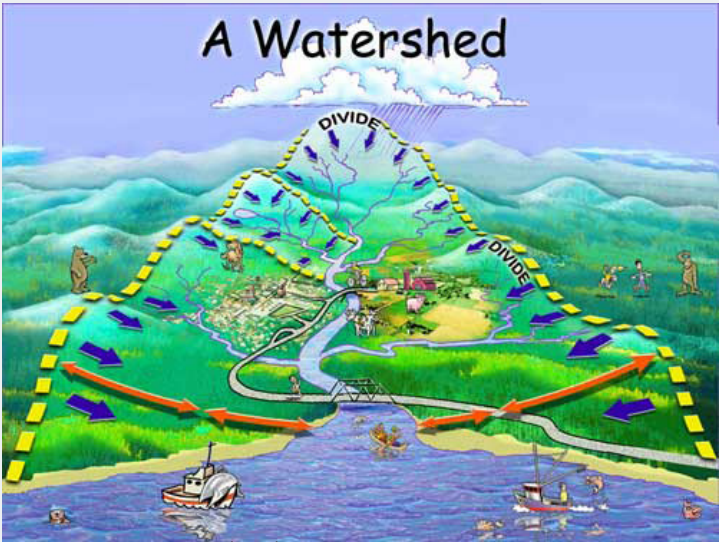


Figure 15: Watershed Diagram

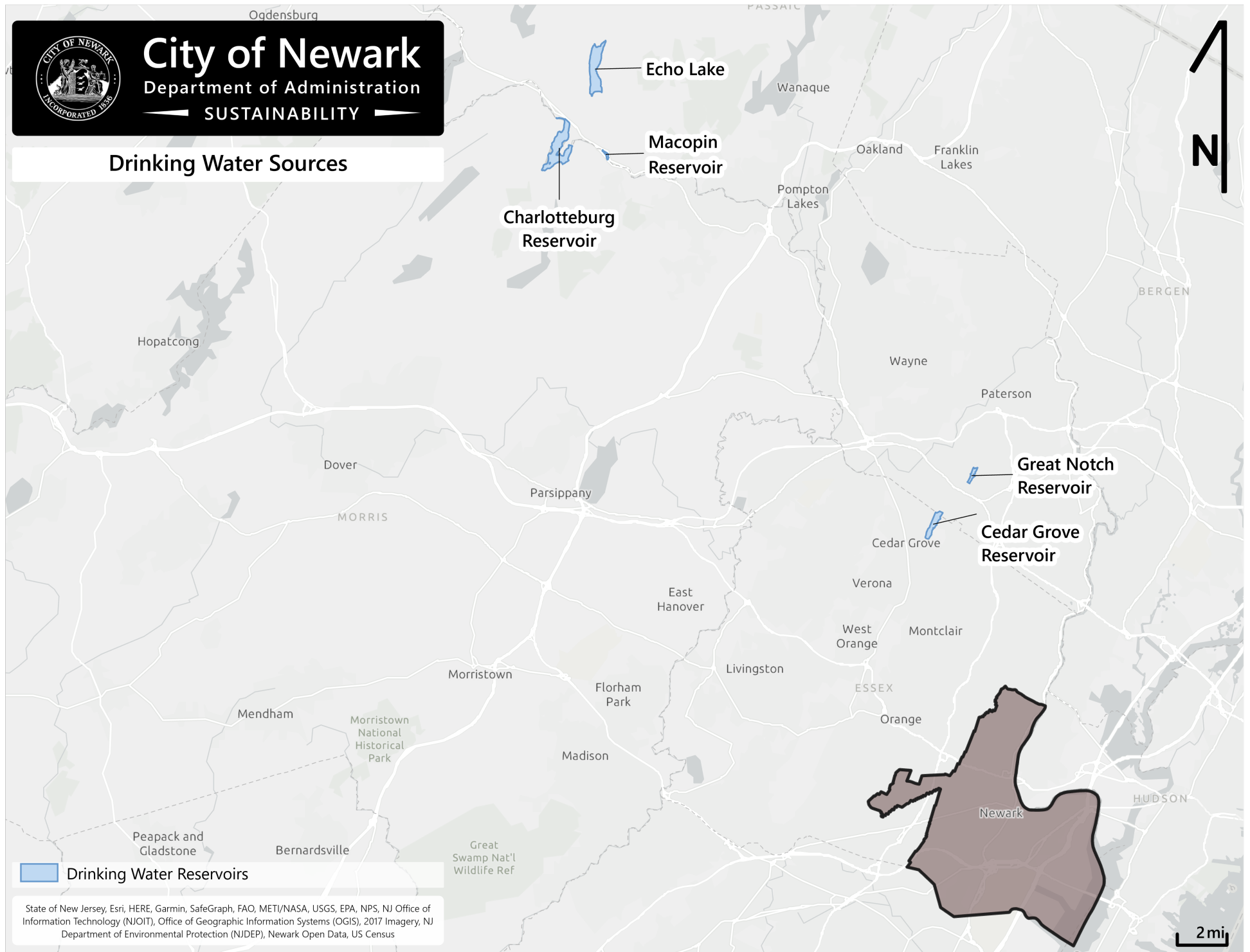


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Drinking Water Sources



State of New Jersey, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, NJ Office of Information Technology (NJ OIT), Office of Geographic Information Systems (OGIS), 2017 Imagery, NJ Department of Environmental Protection (NJDEP), Newark Open Data, US Census

DRINKING WATER

Newark's drinking water comes from over 35,000 acres of protected forested lands, most of which has been owned and managed by the City of Newark since the 1800s. Waterbodies include Echo Lake, Macopin Reservoir, Charlotteburg Reservoir, Great Notch Reservoir, and Cedar Grove Reservoir, located in the Pequannock and Wanaque Watersheds approximately 30 miles northwest of Newark (Map 67). The City of Newark Department of Water & Sewer Utilities treats the water at the Pequannock Water Treatment Plant in West Milford, before delivering nearly 75 million gallons of drinking water per day to over half-a-million people in 10 municipalities (including Newark).

CHAPTER 9: CONCLUSION

The process of mapping and analyzing data can be a powerful tool for exposing patterns of injustice and informing more equitable decision-making. In service to Newark's EJCIO, the maps and analyses provided in this ERI are meant to inform land use and zoning decisions that mitigate and prevent existing and future environmental injustices. To achieve this goal, the Newark ERI is organized quite differently from typical ERIs, which often begin with geological data that set the foundation for other environmental conditions. To instead frame the Newark ERI around highlighting key components of environmental justice, we chose for this ERI to begin with maps and data about pollution, the built environment, demographics, and public health. We feel that information from these categories provides important context about on-the-ground patterns, relationships, and disparities related to the disproportionate impacts from pollution and other environmental detriments.

This is a data-driven report that provides information on areas of interest for environmental justice. The information presented in this report is all based on

publicly available data. Unfortunately, there is a broad lack of community-level data in two key areas of interest to environmental justice: public health and air pollution, which constrained what was available to map in this report. It is our hope that the City and state, as well as organizations and institutions focused on the environment and health, are able to: (1) invest in collecting more granular air quality data (e.g., via additional air monitoring stations and low-cost mobile sensors) to get more nuanced, community level air pollution metrics and (2) resolve barriers limiting the public availability of health data (i.e., balancing privacy concerns with the public utility of health data). We also see strong potential for the contribution of community-gathered spatial data. Meaningful involvement of the public in generating data about lived experiences in their built environment is important in ensuring that data driven decision-making is representative.

This is Newark's first ERI — while we strove for it to illuminate relationships between environmental factors and health outcomes, we hope that Newark's future ERIs can include additional content as

data and resources become available. For example, interest was expressed in seeing maps and/or figures on slaughterhouses, childhood mental health outcomes (e.g., autism), and "hard to reach" populations revealed by 2020 census efforts, but this was not possible due to data availability and/or time limitations. Further, we hope that resources can be made available for more formal analyses of relationships between environmental factors and health outcomes in Newark by academic researchers in collaboration with environmental justice organizations and the City. In this first ERI, we simultaneously aimed to provide metrics at a small spatial scale—enabling New Yorkers see what is most relevant in their area—while providing NJ's state-wide metric for comparison—as the starkest contrasts from an environmental justice perspective are found when comparing Newark to NJ as a whole. There are areas of Newark that are particularly vulnerable, but Newark as a whole is an environmental justice community.

In the process of assembling this report, we found that some of the most critical

aspects of the ERI are not referenced in the paperwork developers use to fulfill the requirements of the EJCIO. Specifically, applicants are not currently required to reference demographic and health indicators, meaning indicators in those categories are not being considered in decision-making. This gap in applicant requirements should be addressed with urgency, to ensure the aims of the EJCIO are being faithfully met. Finally, while the EJCIO and ERI serve as a “sunshine” policy for illuminating relationships related to environmental justice, we hope that Newark and the state will embrace moving beyond illuminating relationships and toward policies that actively work to rectify disparities faced by Newark residents.

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APPENDICES

APPENDIX A: METHODS & GIS DATA SOURCES

Map	Data Point	Data Source	Attribute mapped	Methodology (where applicable)
5	Air Toxics Cancer Risk	EPA EJSCREEN	2019 > CANCER	Join to Newark Census Tracts. Symbology: Unclassed colors tan-purple multipart color scheme, labeled with risk value and state percentile
6	Air Toxics Respiratory Hazard Index	EPA EJSCREEN	2019 > RESP	Symbology: Unclassed colors yellow-red multipart color scheme, labeled with index value and state percentile
7	Air Quality Permitted Facilities	NJDEP Air Quality Permitted Facilities of New Jersey (2020)	FACILITY_TYPE	Clip to Newark boundary
8	Toxic Release Inventory Sites	US EPA: Envirofacts Form R Search	TOTAL_ONSITE	Join to Newark Census Tracts. Download from EPA website using Newark, NJ as search criteria. Geocode using Lat/Long.
9	Designated Truck Routes	Newark Staff	TruckRteDe	-
10	Traffic Proximity & Volume	EPA EJSCREEN	2019 > PTRAF	Join to Newark Census Tracts. Symbology: Unclassed colors white-black multipart color scheme, labeled with value and state percentile
12	Railway Infrastructure	NJOGIS: Passenger Railroad Lines in NJ	Line locations	-
13	Combined Sewer Overflows	NJOGIS: Combined Sewer Overflow (CSO) for NJ , Water Districts from HDR	Point and Polygon locations	Clip to Newark boundary
14	Groundwater Contamination	NJOGIS: Classification Exception Areas-Well Restriction Areas	PROGRAM	Clip to Newark boundary, label using metadata legend

15	NJPDES Surface Water Discharge	NJPDES Surface Water Discharges in New Jersey	STATCODE	Clip to Newark boundary, label using metadata legend
16	NJPDES Regulated Facilities	NJOGIS: NJPDES Regulated Facility Locations	DISTYPE	Clip to Newark boundary, label using metadata legend
17	Water Quality Monitoring	NJOGIS: Water Quality Data Exchange (WQDE) Monitoring Locations	Point Locations	
18	Known Contaminated Sites	NJOGIS: Known Contaminated Site List	STATUS	Clip to Newark boundary, label using metadata legend
19	Brownfield Sites	NJOGIS: New Jersey Brownfields Sitemart New Jersey	OWNERSHIP	Clip to Newark boundary
20	Superfund Sites	EPA: Envirofacts SEMS Search, NPL	Point location	Geocode using lat/long
21	Hazardous Waste Sites	EPA FRS EZ Query	INTEREST_T	Clip to Newark boundary
23	Urban Heat Island Effect	Landsat 8 (from USGS Earth Explorer)	Land Surface Temperature (Celsius)	Followed steps outlined in this document
24	FEMA Flood Hazard Zones	FEMA National Flood Hazard Layer (Web GIS Service)	ZONE_SUBTY (no value = 100 year flood zone)	Click on a panel inside Newark and select "Download County GIS Data". Mapped layer is S_FLD_HAZ_AR. Clip to Newark Boundary.
25	SLOSH Category 1 Flood Zones	SLOSH CAT 1-4 Map Service	Data_Range	Clip to Newark boundary
26	Land Use	NJ MOD-IV Property Class Designations	PROP_CLASS	Symbolized using this spreadsheet
27	Parks and Open Space	NJDEP: State, Local and Nonprofit Open Space of New Jersey	OWNERTYPE	Select for Newark (MUNICIPALITY), map by unique values

28	Urban Agriculture	City of Newark staff	Type of Lot	Geocoded block/lots and addresses from an informal list of urban gardens and farms in the City.
29	Vegetation	Landsat 8 (from USGS EarthExplorer)	NDVI	followed the steps in this YouTube video to map NDVI. Then extracted by mask to clip to Newark boundary (with water dissolved from the boundary).
30	Tree Canopy	NLCD 2016 USFS Tree Canopy Cover (CONUS)	VALUE (Percent tree canopy cover)	Extract by mask to clip to Newark boundary. Symbology: Check display background value and set 0 and Nodata to be transparent. Map colors should be white to dark green.
31	Impervious Surfaces	NJOGIS: 2015 Land Use Land Cover	IS15 (Percent impervious)	Clip map to Newark boundary, map as graduated colors (equal interval of 8%)
32	Transportation Infrastructure	City of Newark staff	SYMBOLTYPE	-
33	Passenger Rail	NJOGIS: Passenger Railroad Lines in NJ	Line locations	-
34	Race & Ethnicity	U.S Census American Community Survey	Census tract values for race and ethnicity	Demographic and Housing Estimates > 2018 5-Year Estimates > Hispanic or Latino and Race > Census tract values for (1) Percent Hispanic or Latino (combining across race), and Not Hispanic or Latino ((2) Percent White Alone, (3) Percent Black or African American alone, (4) Percent American Indian and Alaska Native alone, (5) Percent Asian alone, (6) Percent Native Hawaiian and Other Pacific Islander alone, (7) Percent Some other race alone, (8) Percent Two or more races). Symbology: Dot density, 1 dot = 15 people, discrete color scheme.
35	Poverty	U.S Census American Community Survey	% of families whose income in the past 12 months is below the poverty level	Selected Economic Characteristics > 2018 5-Year Estimates > Census tract values for percentage of families and people whose income in the past 12 months is below the poverty level. Symbology: Graduated colors, manual intervals of 10% width, red discrete color scheme with 6 classes
36	Child Poverty	U.S Census American Community Survey	% of all people under 18 years old below the poverty line in the past 12 months	Selected Economic Characteristics > 2018 5-Year Estimates > Census tract values for percent of all people under 18 years old below the poverty line in the past 12 months. Symbology: Graduated colors, manual intervals of 10% width, orange discrete color scheme with 9 classes, grey for industrial areas with no resident data

37	Unemployment	U.S Census American Community Survey	Unemployment rate in population 20 – 64 years old in the past 12 months	Selected Economic Characteristics > 2018 5-Year Estimates > Census tract values for unemployment rate in population 20 – 64 years old in the past 12 months. Graduated colors, manual intervals of 5% width, purple discrete color scheme with 7 classes, grey for industrial areas with no resident data
38	Income	U.S Census American Community Survey	Median annual household income in the past 12 months in 2018 inflation-adjusted dollars	Selected Economic Characteristics > 2018 5-Year Estimates > Census tract values for median annual household income in the past 12 months in 2018 inflation-adjusted dollars . Graduated colors, manual intervals of \$10,000 width, green discrete color scheme with 7 classes, grey for industrial areas with no resident data
39	Percent Female	U.S Census American Community Survey	Percent of population that is female	Demographic and Housing Estimates > 2018 5-Year Estimates > Census tract values for percent female. Graduated colors, manual intervals of 10% width, pink discrete color scheme with 5 classes, grey for industrial areas with no resident data
40	Population Under 5	U.S Census American Community Survey	Percent of population under 5 years old	Demographic and Housing Estimates > 2018 5-Year Estimates > Census tract values for percent under 5 years. Symbology: Graduated colors, manual intervals of 5% width, blue discrete color scheme with 7 classes
41	Population Over 65	U.S Census American Community Survey	Percent of population over 65 years old	Demographic and Housing Estimates > 2018 5-Year Estimates > Census tract values for (1) Percent 65 years and over and (2) Percent 85 years and over. Symbology: Graduated colors with manual intervals of 5% width for percent 65 and over (blue discrete color scheme with 7 classes), graduated symbols with manual intervals of 1% for percent 85 and over (blue, size 4 to 18 pt)
42	Population Density	U.S Census American Community Survey	Average people per square mile of land	2010 Urbanized Areas > Census tract values for population density (average people per square mile of land). Graduated colors, manual intervals of 10,000 people per sq mi width, Yellow-Green-Blue
43	Education	U.S Census American Community Survey	% of individuals age 25 and over with less than high school degree	Educational Attainment > 2018 5-Year Estimates > Census tract values for percent of individuals age 25 and over with less than high school degree. Symbology: Graduated colors, manual intervals of 10% width, discrete color scheme with 6 classes, grey for industrial areas with no resident data

44	Linguistic Isolation	U.S Census American Community Survey	% of households in which no one over the age of 14 speaks only English at home or speaks English "very well" as a second language (as a fraction of households)	Selected characteristics of the native and foreign-born populations > 2018 5-Year Estimates > Census tract values for percent of households in which no one over the age of 14 speaks only English at home or speaks English "very well" as a second language (as a fraction of households). Symbology: Graduated colors, manual intervals of 10% width, tan-purple discrete color scheme with 6 classes.
45	Health Care Facilities	Hospitals and Health Centers: NJOGIS Hospitals in NJ Dialysis Centers: Reference USA Dialysis Centers Long Term Care Facilities: NJOGIS Long Term Care Facilities of New Jersey	Hospitals and Health Centers: TYPE (acute care = hospitals, everything else = health centers). Dialysis centers & Long Term Care Facilities are mapped as point locations.	-
46	Incarceration Facilities	HIFLD Prison Boundaries (2020)	Polygon locations	Clip to Newark boundary
47	Childcare	Schools: NJOGIS School Point Locations Child Care Centers: NJDEP Childcare Centers	Schools: SOURCE. Child Care Centers are mapped by point locations.	Clip all to Newark boundary
49	Asthma	CDC 500 Cities Project	% of population in census tract 18 years or older with asthma.	2017, 1-Year Modeled Estimates > Percent of population in census tract 18 years or older with asthma. Symbology: Graduated colors, manual intervals of 10% width, orange-red discrete color scheme with 5 classes.
50	Coronary Heart Disease	CDC 500 Cities Project	% of population in census tract 18 years or older with coronary heart disease	2017, 1-Year Modeled Estimates > Percent of population in census tract 18 years or older with coronary heart disease. Symbology: Graduated colors, manual intervals of 3% width, red discrete color scheme with 4 classes.
51	Life Expectancy	CDC U.S. Small-area Life Expectancy Estimates Project	Average life expectancy at birth in years	Life Expectancy Estimates File > 2010-2015, 6 Year Modeled Estimates > Census tract average life expectancy at birth in years. Symbology: Graduated colors, manual intervals of 3-year width, green discrete color scheme with 6 classes

52	High Blood Pressure	CDC 500 Cities Project	Percent of population in census tract 18 years or older with high blood pressure	2017, 1-Year Modeled Estimates > Percent of population in census tract 18 years or older with high blood pressure. Symbology: Graduated colors, manual intervals of 5% width, orange discrete color scheme with 6 classes, grey for industrial areas with no resident data.
53	Obesity	CDC 500 Cities Project	% of pop in census tract 18 years or older who are obese	2017, 1-Year Modeled Estimates > Percent of population in census tract 18 years or older who are obese. Symbology: Graduated colors, manual intervals of 5% width, yellow-red discrete color scheme with 5 classes, grey for industrial areas with no resident data.
54	Diabetes	CDC 500 Cities Project	% of population in census tract 18 years or older with diabetes	2017, 1-Year Modeled Estimates > Percent of population in census tract 18 years or older with diabetes (including diagnosed diabetes of any type other than gestational). Symbology: Graduated colors, manual intervals of 5% width, pink discrete color scheme with 4 classes
55	Mental Distress	CDC 500 Cities Project	% of population in census tract 18 years or older who reported poor mental health	2017, 1-Year Modeled Estimates > Percent of population in census tract 18 years or older who reported poor mental health. Symbology: Graduated colors, manual intervals of 2% width, yellow-red discrete color scheme with 4 classes
56	Lead Exposure Risk Index	City Health Dashboard	Lead Exposure Risk Index	Newark > U.S. Census American Community Survey 2018, 5-Year Estimates > Census tract values for Lead Exposure Risk Index. Symbology: Graduated colors, manual intervals of 1 index value width, brown discrete color scheme with 10 classes
57	Limited Access to Healthy Foods	City Health Dashboard	Limited Access to Healthy Foods	Newark > U.S. Census American Community Survey 2018, 5-Year Estimates > Census tract values for Limited Access to Healthy Foods. Symbology: Graduated colors, manual intervals of 10% width, tan-purple discrete color scheme with 7 classes.
58	Physiographic Regions	NJOGIS: Physiographic Provinces of New Jersey	PROVINCE	-
59	Bedrock Geology	NJGIS: Bedrock Geology of New Jersey (2019)	GEONAME	-
60	Surface Geology	NJGIS: Surficial Geology of New Jersey (2019)	GEONAME	-

61-63	Soil Hydrologic Groups, Soil Series, Soil Phases	USDA Web Soil Survey	HYDGROUP, MUSYM	<ul style="list-style-type: none"> • Upload Newark Boundary as Area of Interest (AOI) • Navigate to "Download Soils Data" tab • Press "Create Download Link" to download soil phases for AOI • Soil Series are found in "spatial" folder (polygon shapefile named "soilmu_a_aoi" but open the dbf in Excel to make edits • Refer to Web Soil Survey to add information about hydrologic groups (Soil Properties & Qualities > Soil Qualities & Features > Hydrologic Soil Group > View Rating). • Map by rating (A,B,C,D etc) / description • Soil Series names can be found on "Soil Map" tab • For soil phases, group by phase in symbology
Inset in 62	Historic Fill	NJOGIS: Historic Fill in New Jersey (2019)	NONE	Clip to Newark boundary
64	Elevation	NJGIS: NJ 10 Foot DEM	Value	
65	Water Bodies & Wetlands	NJGIN: National Hydrography Dataset (NHD) Waterbody 2002 for New Jersey NJDEP: Wetlands of New Jersey (from Land Use/Land Cover 2002 Update)	Surface water bodies: FTYPE_DESC. Map wetlands by polygon location.	Clip to Newark boundary
66	Watersheds	NJGIN: 14 Digit Hydrologic Unit Code Delineations for New Jersey	WATERSHED_NAME	Select watersheds that intersect with the Newark boundary, symbolize with unique values
67	Drinking Water Sources	City of Newark staff	Polygon location	-

APPENDIX B: RELEVANT LEGISLATION

This appendix includes copies of:

1. Newark's Environmental Justice and Cumulative Impact Ordinance (EJCIO)
2. Newark's Environmental Commission Review: Basic Form
3. Newark's Environmental Commission Review: Full Form
4. Newark's Zoning & Land Use Regulations (Chapter 1; full document available at <https://newarkehd.com/zoning-ordinance>)
5. 5.State of New Jersey N.J.S.A. 13:1D-157 (requires DEP to evaluate environmental and public health stressors of certain facilities on overburdened communities when reviewing certain permit applications)



City of Newark

City Hall
920 Broad Street
Newark, New Jersey
07102

Master

File Number: 16-0803

File ID: 16-0803

Type: Ordinance

Status: Adopted

Version: 1

**Contract
No.:**

Controlling Body: Economic and
Housing
Development

Creation Date : 05/09/2016

File Name: Environmental Justice and Cumulative Impact
Ordinance

Final Action: 07/07/2016

Title label: AN ORDINANCE AMENDING TITLE 41, ZONING AND LAND USE REGULATIONS, REVISED GENERAL ORDINANCES OF THE CITY OF NEWARK, NEW JERSEY, 2000, AS AMENDED AND SUPPLEMENTED, BY ADDING A NEW CHAPTER 19 ENTITLED "ENVIRONMENTAL JUSTICE AND CUMULATIVE IMPACTS" TO PROVIDE ADDITIONAL INFORMATION TO THE NEWARK ENVIRONMENTAL COMMISSION, CENTRAL PLANNING BOARD AND ZONING BOARD OF ADJUSTMENT AND TO REQUIRE ADDITIONAL DOCUMENTATION FROM DEVELOPMENT APPLICANTS IN ORDER TO BUILD AN IMPROVED BASIS OF INFORMATION ON WHICH TO CREATE SOUND ENVIRONMENTAL AND LAND USE POLICY.

Notes:

Sponsors:

Enactment Date:

Attachments: 16-0803 - Executive Order 12898, 16-0803 - Executive Order #96 - Governor James McGreevey, 16-0803 - Executive Order #131 - Governor Jon S. Corzine, 16-0803 - N.J.S.A. 40.48-2, 16-0803 - N.J.S.A. 40.55D-2, 16-0803 - N.J.S.A. 40.55D-25, 16-0803 - N.J.S.A. 40.55D-27, 16-0803 - N.J.S.A. 40.55D-28, 16-0803 - N.J.S.A. 40.55D-70, 16-0803 - N.J.S.A. 40.56A-1, 16-0803 - N.J.S.A. 40.56A-2, 16-0803 - N.J.S.A. 40.56A-6, F-e proof published 062216, 16-0803 Certified Ordinance.pdf, 16-0803 Mayor's Press Release.pdf, 16-0803 Affidavit of Publication.pdf, 16-0803 affidavit of publication, 16-0803 distribution letters

Enactment Number:

Contact:

Drafter: crumpl@ci.newark.nj.us

Hearing Date:

Effective Date:

History of Legislative File

Ver- sion:	Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Date:	Result:
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1		06/15/2016	advanced to first reading	
1	Municipal Council	06/15/2016	Advanced and adopted on first reading	Pass
1	Municipal Council	06/15/2016		
1	Municipal Council	07/07/2016	closed on public hearing and adopted	Pass

Text of Legislative File 16-0803

AN ORDINANCE AMENDING TITLE 41, ZONING AND LAND USE REGULATIONS, REVISED GENERAL ORDINANCES OF THE CITY OF NEWARK, NEW JERSEY, 2000, AS AMENDED AND SUPPLEMENTED, BY ADDING A NEW CHAPTER 19 ENTITLED "ENVIRONMENTAL JUSTICE AND CUMULATIVE IMPACTS" TO PROVIDE ADDITIONAL INFORMATION TO THE NEWARK ENVIRONMENTAL COMMISSION, CENTRAL PLANNING BOARD AND ZONING BOARD OF ADJUSTMENT AND TO REQUIRE ADDITIONAL DOCUMENTATION FROM DEVELOPMENT APPLICANTS IN ORDER TO BUILD AN IMPROVED BASIS OF INFORMATION ON WHICH TO CREATE SOUND ENVIRONMENTAL AND LAND USE POLICY.

WHEREAS, the City of Newark ("the City") seeks to promote the health and welfare of those who live, work, do business, and visit within the City, and to protect the quality of the urban environment for the benefit of current and future generations; and

WHEREAS, conditions affecting the existing structures built, natural and social environments in Newark have an impact on human health and welfare, and may in some cases contribute to illness or mortality if left unaddressed; and

WHEREAS, existing environmental conditions reflect a history of industrial use that includes a number of sources of pollution such as: a dense transportation network including highways, a major seaport and airport, and rail hubs; regional infrastructure for transporting and incinerating solid waste and processing wastewater; current industrial and commercial uses with significant environmental impacts from operations and contaminated properties, all of which may have an adverse impact on human health and the environment; and

WHEREAS, patterns of racial, ethnic and economic inequality in the United States result in the geographic concentration of environmentally hazardous land uses and sources of pollution that disproportionately burden the health of low-income communities and communities of color, including communities in Newark, which outcome is known as environmental injustice, and which has been addressed in federal and state policy through Presidential Executive Order 12898, State of New Jersey Executive Order #96 (February

18, 2004), and State of New Jersey Executive Order #131 (February 5, 2009); and

WHEREAS, the City is one of approximately fifty communities identified by the U.S. Environmental Protection Agency (“EPA”) as “environmentally overburdened, underserved, and economically distressed” as part of EPA’s “Making a Visible Difference in Communities” strategic priority; and

WHEREAS, the City has been recognized by the New Jersey Department of Environmental Protection as an area where there are “disproportionate impacts from multiple sources of pollution;” and

WHEREAS, measurements to determine “non-attainment” with federal ambient air quality standards are taken at the regional level such that it is possible for particular neighborhoods or groups of neighborhoods to experience high levels of exposure to criteria pollutants even if the concentration of those pollutants is deemed acceptable for the region as a whole; and

WHEREAS, the combined total effect of many sources of pollution, from stationary sources such as power plants to mobile sources such as cars and trucks creates a cumulative impact that may be more harmful to human health than the impact of any one source of pollution in isolation; and

WHEREAS, State law and regulation on environmental pollution currently focuses primarily on individual rather than cumulative impacts from proposed projects when assessing eligibility for permits related to the environment, limiting the ability of State agencies to provide protection from the cumulative impacts of pollution on human health; and

WHEREAS, the City wishes to create stronger environmental and land use policy tools at the local level to prevent and mitigate additional pollution associated with new development projects; and

WHEREAS, the creation of such stronger policy tools is permitted for municipalities under State laws that provide for municipal oversight of decisions on land use, including those pertaining to environmental health via N.J.S.A. 40:48-2, which states, “Any municipality may make, amend...and enforce such ordinances, regulations, rules and by-laws not contrary to the laws of this State or of the United States, as it may deem necessary and proper for the good government, order and protection of persons and property, and for the preservation of the public health, safety and welfare of the municipality and its inhabitants...” and via the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., which authorizes municipalities to “guide the appropriate use or development of all lands in this State, in a manner which will promote the public health, safety, morals and general welfare,” and to “secure safety from fire, flood, panic and other natural and man-made disasters,” to “promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods,

communities and regions and preservation of the environment,” ”to “promote the conservation of...open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of land,” among other goals and purposes; and

WHEREAS, the Municipal Land Use Law, at N.J.S.A. 40:55D-28b, provides: “The master plan shall generally comprise a report or statement and land use and development proposals, with maps, diagrams and text, presenting...where appropriate, the following elements...: (9) An economic plan element considering all aspects of economic development and sustained economic vitality, including (a) a comparison of the types of employment expected to be provided by the economic development to be promoted with the characteristics of the labor pool resident in the municipality and nearby areas and (b) an analysis of the stability and diversity of the economic development to be promoted; ...(16) A green buildings and environmental sustainability plan element, which shall provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on-site; and optimize climatic conditions through site orientation and design”; and

WHEREAS, it is the express intent of Newark’s Master Plan, adopted September 24, 2012, to “prevent additional air pollution, especially in overburdened neighborhoods, and mitigate existing polluting sources” by “reduc[ing] vehicle idling and emissions,” by requiring “facilities infrastructure improvements to avoid truck idling,” by “adopt[ing] land use and zoning rules that increase the efficiency of truck travel and minimize the impact of diesel emissions on vulnerable populations,” by “amend[ing] the zoning ordinance to screen new projects for cumulative impacts on air quality,” for the purpose of helping Newark “[b]ecome a ‘city of choice’ where a diverse range of people will want to live, work, learn, and play by improving environmental quality...,” and

WHEREAS, Newark’s Master Plan recognizes that “[i]n collecting information about air quality and greenhouse gas emissions, the City can measure whether its policies are having a positive impact on human safety and livability”; and

WHEREAS, it is the express intent of Newark’s Master Plan to address adverse impacts on groundwater and soil from stormwater runoff; and

WHEREAS, it is the express intent of Newark’s Master Plan to “move toward becoming a ‘zero waste’ city - a place that burns and buries as close to nothing as possible;” and

WHEREAS, pursuant to the Municipal Land Use Law, at N.J.S.A. 40:55D-25 b., “The Planning Board may...(2) Assemble data on a continuing basis as part of a continuous planning process;” and “(3) Perform such other advisory duties as are assigned to it by ordinance or resolution of the Governing Body for the aid and assistance of the

Governing Body or other agencies or officers”; and

WHEREAS, pursuant to the Municipal Land Use Law, at N.J.S.A. 40:55D-70, “No variance or other relief may be granted...without a showing that such variance or other relief can be granted without substantial detriment to the public good and will not substantially impair the intent and the purpose of the zone plan and zoning ordinance;” and

WHEREAS, the Newark Environmental Commission was established pursuant to N.J.S.A. 40:56A-1 to 40:56A-12 “for the protection, development or use of natural resources,” and empowered to “to conduct research into the use and possible use of the open land areas of the municipality,” and “may...prepare, print, and distribute books, maps, charts, plans and pamphlets which in its judgment it deems necessary for its purposes...and may from time to time recommend to the Planning Board... plans and programs for inclusion in a master plan and the development and use of such areas;” and

WHEREAS, pursuant to Section 2:2-41.4c. of the Municipal Code of the City of Newark, the Newark Environmental Commission is further charged with establishing its own “priorities with due consideration of the City’s needs for...a Green City Plan which addresses the need for sustainable development and the reduction of air pollutants in the City;” and

WHEREAS, the Newark Environmental Commission has the power pursuant to N.J.S.A. 40:56A-6 to “study and make recommendations concerning open space preservation, water resources management, air pollution control, solid waste management, noise control, soil and landscape protection, environmental appearance, marine resources and protection of flora and fauna;” and

WHEREAS, N.J.S.A. 40:55D-27b. provides that “whenever the Environmental Commission has prepared and submitted to the Planning Board and Board of Adjustment an index of the natural resources of the municipality, the Planning Board or the Board of Adjustment shall make available to the Environmental Commission an informational copy of every application for development submitted to either board;” and

WHEREAS, the Newark Environmental Commission intends to prepare and submit such an index in the form of a Natural Resources Index as described below; and

WHEREAS, the Association of New Jersey Environmental Commissioners has expressed support for the Newark Environmental Commission in advising the Planning Board and Zoning Board of Adjustments on the environmental impact of proposed development projects, which support it currently provides to a number of New Jersey municipalities; and

WHEREAS, additional information about environmental impacts of proposed new development projects in the context of the cumulative impact of all pre-existing development, along with advisory input from the Newark Environmental Commission on

same, will assist City policy-makers and the public in advancing goals expressed in the Newark Master Plan and Sustainability Action Plan and improving long-term planning.

NOW, THEREFORE, BE IT ORDAINED BY THE MUNICIPAL COUNCIL OF THE CITY OF NEWARK, NEW JERSEY, THAT:

Section 1. Amend Title 41, Zoning and Land Use Regulations of the Revised General Ordinances of the City of Newark, New Jersey, 2000, as amended and supplemented, by adding a new Chapter 19, Environmental Justice and Cumulative Impact shall include the following:

1.1 . Purpose: The City of Newark Municipal Code is hereby amended to include the requirements enumerated herein, which shall assist the Environmental Commission, Newark Central Planning Board and Zoning Board of Adjustment in better understanding the environmental impacts of development projects, and support improved long-term planning in order to enhance, protect and preserve a healthy urban environment for the benefit of all present and future residents and workers.

1.2. Policy Statement: The goal of the Environmental Justice & Cumulative Impacts Ordinance is to advance Environmental Justice (as defined herein), good stewardship, and sustainable economic development in furtherance of the priorities outlined in the Newark Sustainability Action Plan and the Newark Master Plan. Through this Ordinance, the City of Newark seeks to:

- a. Protect the health of all residents, regardless of race, culture or income, from exposure to pollution linked to adverse health effects, including the cumulative impacts that may be worsened as an unintended by-product of new development or redevelopment, and to ensure the enforcement of laws, regulations, and policies in a manner consistent with the principles of Environmental Justice.
- b. Take appropriate action to avoid, minimize and mitigate pollution from all sources within Newark's jurisdiction through partnerships, innovation, and enforcement.
- c. Encourage proposals for development or redevelopment that contribute positively to Newark's environmental, economic, and social health or, at minimum, that do not contribute net new pollution to the environment or adversely impact public health.
- d. To the extent permitted by law, discourage and advocate against development or redevelopment proposals that contribute net additional pollution; particularly, types of pollution linked to human health problems, and avoid taking actions or decisions that add to the total amount of pollution impacting an area deemed disproportionately impacted by pre-existing pollution.
- e. To create a better basis of information for decision-making with regard to

public health and the environment with regard to new project proposals, and to require development and redevelopment applicants seeking approval for projects that have the potential to generate additional pollution to provide information in the form of an Environmental Review Checklist as provided herein, which shall be added to the checklist requirements and provided to development and redevelopment applicants pursuant to N.J.S.A. 40:55D-10.3.

f. To create a better basis of information for decision-making with regard to public health, the environment and pre-existing pollution by developing a Natural Resources Index that identifies areas that can be considered disproportionately burdened with existing pollution pursuant to standards of Environmental Justice and that, upon approval, will become a required reference document for the Environmental Review Checklist.

g. Promote meaningful public participation and transparent decision-making by identifying risks to public health and the environment, and by providing an opportunity to select alternatives and/or mitigation measures that remedy, avoid or minimize such risks.

1.3. Definitions

a. **Covered Applicant** - Shall mean an applicant for major site plan approval from the Newark Central Planning Board or a variance from the Newark Zoning Board of Adjustment that (i) is seeking approval for a Commercial, Light Manufacturing or Industrial Use project, as defined under Paragraphs 3.g, 3.h and 3.i hereinafter; and (ii) requires one or more approvals or permits from the U.S. Environmental Protection Agency ("EPA") or the New Jersey Department of Environmental Protection, or requires inclusion in the Essex County Solid Waste Management Plan, upon advice from the Essex County Solid Waste Advisory Council. Said approvals or permits shall include, but shall not be limited to, any approval or permit required pursuant to the Clean Air Act, 42 U.S.C. §7401 et seq.; the Clean Water Act, 33 U.S.C. §1251 et seq. (including any approval or permit issued thereunder by the U.S. Army Corps of Engineers); the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq.; the New Jersey Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq.; the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.; the Water Quality Planning Act, N.J.S.A. 58:11A-1, et seq.; the Waterfront Development Law, N.J.S.A. 12:5-3 et seq.; the Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq.; the Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 et seq. and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. A Covered Applicant shall include an applicant that is seeking approval for a mixed-use project which includes a residential use.

b. **Criteria Pollutants** - Shall mean any pollutants listed by the EPA Administrator pursuant to Section 108(a) of the Clean Air Act, 42 USC Section 7408(a) as Criteria Air Pollutants which includes carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution (PM 10 and PM 2.5) and sulfur dioxide.

c. Environmental Justice - Shall mean the fair treatment of and right of all persons, regardless of race, color, national origin, ethnicity, income or other demographic or geographic characteristics, to have access to a safe, healthy living environment. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear disproportionately high exposure to pollution or adverse human health or environmental impacts, which disproportionately high exposure is known as Environmental Injustice, as further described in Presidential Executive Order 12898, State of New Jersey Executive Order #96 (February 18, 2004), and State of New Jersey Executive Order #131 (February 5, 2009).

d. Natural Resources Index (“NRI”) - Shall mean a document that compiles and analyzes information about baseline environmental and socio-economic conditions in the City of Newark, for purposes of long-term planning that promotes public health, vibrant communities, and sustainable economic development. The NRI may include maps, tables, and narrative describing the extent, type, and location of factors that may affect environmental health both positively and negatively.

e. Hazardous Air Pollutants - Shall mean any air pollutants listed in Section 112(b) of the Clean Air Act, 42 USC 7412(b) and amended by 40 CFR 63, Subpart C.

f. Environmental Review Checklist (“Checklist”) - Shall mean an informational document covering specific environmental impact information, as specified herein, that must be submitted by Covered Applicants in addition to other required submissions for major site plan approval from the Newark Central Planning Board or approval of a variance from the Zoning Board of Adjustment. This document shall provide information to be used by the Newark Environmental Commission, City staff and members of the Central Planning Board and Zoning Board of Adjustment to improve public understanding of the potential cumulative environmental impacts of proposed development and provide a basis for more informed policy decisions on municipal land use. This Checklist will be in the format attached hereto as Exhibit A.

g. Commercial - shall have the same definition as provided in the Newark Zoning and Land Use Regulations, Title 41, Chapter 2.

h. Industrial - shall have the same definitions for “Manufacturing, Heavy,” and “Manufacturing, Medium” as provided in the Newark Zoning and Land Use Regulations, Title 41, Chapter 2.

i. Light Manufacturing - shall have the same definition as provided in the Newark Zoning and Land Use Regulations, Title 41, Chapter 2.

j. Greenhouse Gas - shall have the same definition as provided in the Global Warming Response Act, N.J.S.A. 26:2C-37 et seq.

k. Administrative Officer - shall generally mean the respective Board Secretary or Board Clerk assigned to receive applications and plan documents on behalf of the Central Planning Board or Zoning Board of Adjustment.

1.4. Natural Resources Index (NRI)

a. The Newark Environmental Commission, in consultation with City of Newark departmental staff, as coordinated by the Mayor's Office of Sustainability, is hereby directed to research, draft, and present to the Planning Board and Zoning Board of Adjustment a Natural Resources Index (NRI), pursuant to N.J.S.A. 40:55D-27b. The NRI will include data on built, natural, environmental, health and demographic features that occur within Newark's boundaries. The NRI will also seek to make visible to the public geospatial information about environmental features, both positive and negative, as juxtaposed to demographic and health data, in order to develop a better understanding of the relationships among environment, land use, public health, and neighborhood quality of life. The NRI is intended to be a work in progress, bringing diverse sources of information together to form the basis of improved policy making over time. The NRI shall include information on:

(i) Natural resources and physical infrastructure within the boundaries of the City of Newark, including but not limited to: highways, railyards, railways, roadways, designated truck routes, industrial areas, seaports, airports, utilities, waterways, trees, parks, wetlands, and gardens;

(ii) Available health indicators data, including asthma rates, lung cancer, low birth weight infants, cardiovascular disease, and other illnesses associated with environmental hazards;

(iii) Existing permitted, point, non-point and area sources of pollution, toxins registered or required to be registered with the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq., Superfund (CERCLA) and Brownfield sites, hazardous waste storage facilities, and other known sources of pollution affecting Newark residents, which may be obtained from City, federal or state databases such as those created or maintained by the EPA;

(iv) Location of vulnerable populations and land uses, including flood zones, location of schools, daycares, senior centers, hospitals, jails, dialysis centers, recreation centers, public housing and detention centers;

(v) Data on socio-economic conditions of residents, including poverty, income, race, ethnicity, gender, unemployment, and age including information on the number and location of residents over 65 and under 5 years old;

(vi) Any other information deemed appropriate or necessary by the Newark Environmental Commission.

b. An NRI shall be developed and approved by the Newark Environmental Commission within twelve (12) months of the passage of this Ordinance. The approved NRI shall be forwarded to the Planning and Zoning Boards.

- c. The Newark Environmental Commission shall organize and hold at least one public hearing to solicit public information and increase public awareness on the NRI prior to preparation of the final draft thereof.
- d. The NRI shall be updated every three years.
- e. The NRI shall be a required reference document for any Environmental Review Checklist submitted following the publication of an approved version of the NRI by the City of Newark.

1.5. Newark Environmental Review Checklist (“Checklist”):

- a. Covered Applicants shall prepare and submit an Environmental Review Checklist to the Planning Board or Zoning Board, as appropriate, as a required component of any application for major site plan approval or for a variance in the form attached to this Ordinance as Exhibit A. The checklist for projects which meet the criteria of Paragraph 3.a hereof shall be amended to include said Environmental Review Checklist and shall be provided to all Covered Applicants.
- b. In the event that the Covered Applicant fails to submit a complete Environmental Review Checklist, the application shall be deemed incomplete.
- c. A conforming copy of the Environmental Review Checklist shall also be submitted by the Covered Applicant to the Administrative Officer within the Newark Planning Office.
- d. Upon receipt, the Administrative Officer shall forward a copy of the Environmental Review Checklist to the Chair(s) of the Newark Environmental Commission, the Director of the Office of Sustainability, the Director of Engineering, the Director of Community Health and Wellness, and the Director of Neighborhood and Recreational Services or its successor Department. The Environmental Review Checklist will be made available as part of the complete major site plan application or variance application to members of the public.
- e. Upon receipt of the Newark Environmental Review Checklist, the Newark Environmental Commission members shall review the material and provide a written advisory opinion as soon as reasonably practicable to the Secretary of the Boards for transmittal to the members of the Planning Board or Zoning Board of Adjustment, as appropriate.
- f. Nothing in this Ordinance shall limit the statutory powers of the Planning Board or Zoning Board of Adjustment under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq.
- g. Nothing in this ordinance shall limit the statutory powers of the Newark Environmental Commission under Title 40, Chapter 56A, of the New Jersey Statutes.

1.6. Escrow Fees for Covered Redevelopment Projects:

- a. For projects which meet the criteria of Paragraph 3.a. hereof, and which are also redevelopment projects subject to a redevelopment plan adopted

pursuant to the Local Redevelopment and Housing Law, N.J.S.A. 40A:12A-1 et seq., a Covered Applicant shall be required, as a potential redeveloper, to comply with the provisions of the Chapter entitled “Escrow Fees for Redevelopment Matters” in Title 41 of the City of Newark Municipal Code entitled “NEWARK ZONING AND LAND USE REGULATIONS”

1.7. Environmental Justice Policy Review: Based on the trends and patterns in the NRI and the Environmental Review Checklists for each new development or redevelopment project, the Newark Environmental Commission shall make annual recommendations to the Mayor and the Municipal Council regarding projects and policies that may serve to (i) reduce health-harmful pollution, (ii) improve the environmental impacts of private development projects, and (iii) promote the adoption of best practices for reducing environmental impacts into City capital projects, as well as appropriate updates to the NRI.

Section 2. Exhibit A: Environmental Review Checklist

1. Cover Sheet

- Name of applicant entity
- Contact information (name, email, phone, address)
- Location of Proposed Project (address and block and lot)
- Summary description of proposed project (one paragraph only) including proposed dimensions of any buildings and total project cost
- Existing land use at project site and existing land use zoning designation
- Requested variance, if any

2. Permits:

- List of all Permits and Approvals needed
- Copy of any permits already obtained from the United States Environmental Protection Agency, the New Jersey Department of Environmental Protection, or evidence of inclusion in the Essex County Solid Waste Management Plan after advice of the Essex County Solid Waste Advisory Council.

3. BASIC FORM - For Covered Applicants with a Commercial or Light Manufacturing Use, including those uses within an MX-1 or MX-2 Zone

A. Environmental Impact Activities: Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for any category below, applicant shall identify such permit. Applicant shall provide information for a category only if a permit is involved for the

category. Applicant is not required to provide information for the residential component of a mixed-use project.

- i. **AIR POLLUTION:** Chart listing tons per year of all Criteria Pollutants and Hazardous Air Pollutants to be emitted as a result of project operation.
- ii. **STORMWATER RETENTION & DISCHARGE:** Brief narrative summary of on-site stormwater capture including total volume to be controlled; Brief narrative summary of permitted sewer and stormwater discharge including total volume to be discharged.
- iii. **HAZARDOUS or TOXIC MATERIALS:** List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law, such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A.34:5A-1 et seq. State whether an emergency management plan has been filed with the City's Office of Emergency Management.
- iv. **TRUCK TRIPS:** Estimated number of truck trips per day anticipated during normal operations. Indicate if trucks will be owned or contracted.
- v. **FUEL USE:** List type of fuel to be used for heating, cooling, and operations (e.g., Number 4 or 6 Heating Oil; Natural Gas, Solar or Wind)
- vi. **HAZARDOUS AND SOLID WASTE & RECYCLING:** Provide copy of applicable Waste Permit or application, if applicable and available. Brief narrative description of plan for compliance with City of Newark Recycling Ordinance Title XV, Chapter 12.

B. Optional - Additional Information on Environmental Mitigation Activities:

At the applicant's discretion, information may be submitted to highlight elements of design, construction or operation intended to mitigate, minimize, or avoid negative environmental impacts. Information should be in the form of a brief narrative description in each relevant category. The list below is intended to serve as a suggested menu of possible topics and is not exhaustive.

- i. Air pollution reduction technologies for stacks, exhaust pipes, cooking equipment, or other such equipment or facilities
- ii. On-site or off-site Green Stormwater Infrastructure
- iii. Energy efficiency or renewable energy elements
- iv. Waste minimization or re-use programs
- v. Water conservation measures
- vi. Green supply chain efforts
- vii. Clean fleet (alternative fuel, retrofitted diesel engines, or other such fuel types or engines)
- viii. Indoor air quality controls

- ix. Plans to minimize noise, dust, odor and light pollution
- x. Public space design and landscaping elements
- xi. Voluntary arrangement to provide a first-interview opportunity for employment to Newark residents, beyond that required by Newark ordinances
- xii. Voluntary contribution (in-kind or funding) to support community initiatives
- xiii. Measures taken to inform or engage neighbors about the project prior to submission of plans

4. FULL FORM - For Covered Applicants with an Industrial Use:

A. Detailed Project Description: Brief summary of types of products or services to be produced, a physical description of proposed building and grounds, including any pre-improvement contamination issues and clean-up plans, and overview of anticipated environmental impact, controls to comply with environmental regulations, and any voluntary activities undertaken to go beyond legally required environmental control standards.

B. Pre-existing Environmental Conditions Description: To the extent such information is available in an approved NRI, a brief summary of pre-existing environmental conditions within a half-mile radius of proposed project site, including name and location of any other properties in that area with air pollution emission permits from the federal or state government; location of known contaminated sites and properties storing or using toxic chemicals; location of receptor populations including schools, day-cares, residential blocks, detention centers or prisons, and senior centers; and location of any environmentally-sensitive areas such as wetlands, waterways or parks.

C. Environmental Impact Description: Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for the category below, applicant should identify such permit. Applicant must provide a description for each category regardless of whether a permit is involved, to the extent such information is available or can be readily obtained.

i. **AIR POLLUTION:** Chart listing tons per year of all Criteria Pollutants, Hazardous Air Pollutants, and Greenhouse Gas emission equivalents. Include maximum permitted tons per year and anticipated actual tons per year.

ii. **STORMWATER RETENTION & DISCHARGE:** Brief narrative summary of on-site stormwater capture including total volume to be controlled; Brief

narrative summary of permitted sewer and stormwater discharge including total volume to be discharged and any onsite treatment technology.

iii. **WATER USE:** Estimate of volume of water to be used annually for operations.

iv. **ENERGY USE:** Estimate of kilowatt hours of energy to be used annually for operations.

v. **HAZARDOUS or TOXIC MATERIALS:** List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq. State whether an emergency m

SECTION E

ENVIRONMENTAL COMMISSION REVIEW

(No application will be deemed complete unless this section has been completed)

DOES THE PROPERTY REQUIRE ONE OR MORE APPROVALS OR PERMITS FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA), OR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, OR REQUIRE INCLUSION IN THE ESSEX COUNTY SOLID WASTE MANAGEMENT PLAN UPON ADVICE FROM THE ESSEX COUNTY SOLID WASTE ADVISORY COUNCIL? () YES () NO

[Said approvals or permits shall include, but shall not be limited to, any approval or permit required pursuant to the Clean Air Act, 42 U.S.C. §7401 *et seq.*; the Clean Water Act, 33 U.S.C. §1251 *et seq.* (including any approval or permit issued thereunder by the U.S. Army Corps of Engineers); the Resource Conservation and Recovery Act, 42 U.S.C. §6901 *et seq.*; the New Jersey Air Pollution Control Act, N.J.S.A. 26:2C-1 *et seq.*; the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 *et seq.*; the Water Quality Planning Act, N.J.S.A. 58:11A-1, *et seq.*; the Waterfront Development Law, N.J.S.A. 12:5-3 *et seq.*; the Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 *et seq.*; the Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 *et seq.* and the Solid Waste Management Act, N.J.S.A. 13:1E-1 *et seq.*]

If yes, please list the approvals or permits required:

As per the Environmental Justice and Cumulative Impacts Ordinance (6PSF-e), adopted 7/7/16 and effective 7/27/16, a covered application for environmental commission review is any major site plan seeking approval from the Central Planning Board or the Zoning Board of Adjustment for a commercial, light manufacturing or industrial use project which also requires one or more approvals or permits from the U.S. Environmental Protection Agency or the New Jersey Department of Environmental Protection, or requires inclusion in the Essex County Solid Waste Management Plan, upon advice from the Essex County Solid Waste Advisory Council.

ENVIRONMENTAL COMMISSIONS REVIEW: BASIC FORM

For Covered Applicants with a Commercial or Light Manufacturing Use, including those uses within an MX-1 or MX-2 Zone. If more space is required, please attach additional responses to this form.

A. Environmental Impact Activities: Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for any category below, applicant shall identify such permit. Applicant shall provide information for a category only if a permit is involved for the category. Applicant is not required to provide information for the residential component of a mixed-use project.

I. AIR POLLUTION: Chart listing tons per year of all Criteria Pollutants and Hazardous Air Pollutants to be emitted as a result of project operation. (If more space is required, please attach an additional chart to this form).

Type:	Amount (tons per year):

II. STORMWATER RETENTION & DISCHARGE: Brief narrative summary of on-site stormwater capture including total volume to be controlled; brief narrative summary of permitted sewer and stormwater discharge including total volume to be discharged.

III. HAZARDOUS or TOXIC MATERIALS: List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law, such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A.34:5A-1 et seq. State whether an emergency management plan has been filed with the City's Office of Emergency Management.

IV. TRUCK TRIPS: Estimated number of truck trips per day anticipated during normal operations. Indicate if trucks will be owned or contracted.

V. FUEL USE: List type of fuel to be used for heating, cooling, and operations (e.g., Number 4 or 6 Heating Oil; Natural Gas, Solar or Wind)

VI. HAZARDOUS AND SOLID WASTE & RECYCLING: Provide copy of applicable Waste Permit or application, if applicable and available. Provide brief narrative description below of plan for compliance with City of Newark Recycling Ordinance Title XV, Chapter 12.

B. OPTIONAL: ADDITIONAL INFORMATION ON ENVIRONMENTAL MITIGATION ACTIVITIES:

At the applicant's discretion, information may be submitted to highlight elements of design, construction or operation intended to mitigate, minimize, or avoid negative environmental impacts. Such efforts may include but are not limited to:

- i. Air pollution reduction technologies for stacks, exhaust pipes, cooking equipment, or other such equipment or facilities
- ii. On-site or off-site green stormwater infrastructure
- iii. Energy efficiency or renewable energy elements
- iv. Waste minimization and/or re-use programs
- v. Water conservation measures
- vi. Green supply chain efforts
- vii. Clean fleet commitments (alternative fuel, retrofitted diesel engines, or other such fuel types or engines)
- viii. Indoor air quality controls
- ix. Plans to minimize noise, dust, odor and light pollution
- x. Public space design and landscaping elements
- xi. Voluntary arrangement to provide a first-interview opportunity for employment to Newark residents, beyond that required by Newark ordinances
- xii. Voluntary contribution (in-kind or funding) to support community initiatives
- xiii. Measures taken to inform or engage neighbors about the project prior to submission of plans

ENVIRONMENTAL COMMISSION REVIEW: FULL FORM

For Covered Applicants with an Industrial Use. If more space is required, please attach additional responses to this form.

- A. Detailed Project Description:** Brief summary of types of products or services to be produced, a physical description of proposed building and grounds, including any pre-improvement contamination issues and clean-up plans, and overview of anticipated environmental impact, controls to comply with environmental regulations, and any voluntary activities undertaken to go beyond legally required environmental control standards.

- B. Pre-existing Environmental Conditions Description:** To the extent such information is available in an approved NRI, a brief summary of pre-existing environmental conditions within a half-mile radius of proposed project site, including name and location of any other properties in that area with air pollution emission permits from the federal or state government; location of known contaminated sites and properties storing or using toxic chemicals; location of receptor populations including schools, day-cares, residential blocks, detention centers or prisons, and senior centers; and location of any environmentally-sensitive areas such as wetlands, waterways or parks.

- C. Environmental Impact Description:** Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for the category below, applicant should identify such permit. Applicant must provide a description for each category regardless of whether a permit is involved, to the extent such information is available or can be readily obtained.

i. AIR POLLUTION:

Chart listing tons per year of all Criteria Pollutants, Hazardous Air Pollutants, and Greenhouse Gas emission equivalents to be emitted as a result of project operation. Include maximum permitted tons per year and anticipated actual tons per year. (If more space is required, please attach an additional chart to this form).

Criteria Pollutants, Hazardous Air Pollutants, and Greenhouse Gas emission equivalents:	Maximum permitted tons/year	Anticipated actual tons/year

ii. STORMWATER RETENTION & DISCHARGE:

Brief narrative summary of on-site stormwater capture including total volume to be controlled; brief narrative summary of permitted sewer and stormwater discharge including total volume to be discharged and any onsite treatment technology.

iii. WATER USE:

Estimate of volume of water to be used annually for operations.

iv. ENERGY USE:

Estimate of kilowatt hours of energy to be used annually for operations.

v. HAZARDOUS or TOXIC MATERIALS:

List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq. State whether an emergency management plan has been filed with the City's Office of Emergency Management.

vi. TRUCK TRIPS:

Estimated number of truck trips per day anticipated during normal operations. Indicate if trucks will be owned or contracted. Provide information about how deliveries and pick-ups will comply with the City of Newark's truck route regulations.

vii. FUEL USE:

List type of fuel to be used for heating, cooling, and operations (e.g., Number 4 or 6 Heating Oil; Natural Gas, Solar or Wind)

viii. WASTE & RECYCLING:

Provide copy of applicable Waste Permit or application, if applicable and available. Provide brief narrative description of plan for compliance with City of Newark Recycling Ordinance Title XV, Chapter 12.

ix. NUISANCE ISSUES:

Provide a brief description of both projected impact of and plans to avoid, minimize, and control the following:

- a. Dust:

- b. Noise:

- c. Light:

- d. Odors:

D. Economic Opportunity Description: List estimated number of new jobs to be generated as a result of both construction and operation of the proposed project. Include a brief narrative description of any activities undertaken to provide Newark residents with access to these job opportunities.

E. Public Engagement Description: Briefly describe any efforts undertaken prior to filing for major site plan and/or variance approval to inform or engage the residents living and businesses operating in the vicinity of the proposed project.

F. Quality of Life and Public Health Protection Measures: Briefly describe any efforts to avoid, minimize, and mitigate any pollution emissions or environmental impacts both during construction and during operation. Such efforts may include but are not limited to:

- i. Pollution reduction technologies
- ii. Stormwater management via Green Infrastructure
- iii. Energy efficiency or renewable energy elements
- iv. Waste minimization and/or re-use program
- v. Water conservation measures
- vi. Green supply chain
- vii. Clean fleet commitments (2010 or newer truck engines, retrofit filters on older trucks, alternative fuel, zero emissions vehicles or other such commitments)
- viii. Indoor air quality controls
- ix. Tree canopy expansion or vegetative buffers
- x. Greenhouse Gas emission reduction technology or design

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G. Alternative Design (Optional): Provide a brief comparative description of at least one alternative design scheme, site location, engineered system, equipment choice or operational approach that was considered for reductions in negative environmental or public health impacts or increases in positive public impacts such as increased green space, energy reduction, air quality, water quality, stormwater runoff absorption and waste reduction.

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CHAPTER 92

AN ACT concerning the disproportionate environmental and public health impacts of pollution on overburdened communities, and supplementing Title 13 of the Revised Statutes.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

C.13:1D-157 Findings, declarations relative to impact of pollution on overburdened communities.

1. The Legislature finds and declares that all New Jersey residents, regardless of income, race, ethnicity, color, or national origin, have a right to live, work, and recreate in a clean and healthy environment; that, historically, New Jersey's low-income communities and communities of color have been subject to a disproportionately high number of environmental and public health stressors, including pollution from numerous industrial, commercial, and governmental facilities located in those communities; that, as a result, residents in the State's overburdened communities have suffered from increased adverse health effects including, but not limited to, asthma, cancer, elevated blood lead levels, cardiovascular disease, and developmental disorders; that children are especially vulnerable to the adverse health effects caused by exposure to pollution, and that such health effects may severely limit a child's potential for future success; that the adverse effects caused by pollution impede the growth, stability, and long-term well-being of individuals and families living in overburdened communities; that the legacy of siting sources of pollution in overburdened communities continues to pose a threat to the health, well-being, and economic success of the State's most vulnerable residents; and that it is past time for the State to correct this historical injustice.

The Legislature further finds and declares that no community should bear a disproportionate share of the adverse environmental and public health consequences that accompany the State's economic growth; that the State's overburdened communities must have a meaningful opportunity to participate in any decision to allow in such communities certain types of facilities which, by the nature of their activity, have the potential to increase environmental and public health stressors; and that it is in the public interest for the State, where appropriate, to limit the future placement and expansion of such facilities in overburdened communities.

C.13:1D-158 Definitions relative to impact of pollution on overburdened communities.

2. As used in this act:

"Department" means the Department of Environmental Protection.

"Environmental or public health stressors" means sources of environmental pollution, including, but not limited to, concentrated areas of air pollution, mobile sources of air pollution, contaminated sites, transfer stations or other solid waste facilities, recycling facilities, scrap yards, and point-sources of water pollution including, but not limited to, water pollution from facilities or combined sewer overflows; or conditions that may cause potential public health impacts, including, but not limited to, asthma, cancer, elevated blood lead levels, cardiovascular disease, and developmental problems in the overburdened community.

“Facility” means any: (1) major source of air pollution; (2) resource recovery facility or incinerator; (3) sludge processing facility, combustor, or incinerator; (4) sewage treatment plant with a capacity of more than 50 million gallons per day; (5) transfer station or other solid waste facility, or recycling facility intending to receive at least 100 tons of recyclable material per day; (6) scrap metal facility; (7) landfill, including, but not limited to, a landfill that accepts ash, construction or demolition debris, or solid waste; or (8) medical waste incinerator; except that “facility” shall not include a facility as defined in section 3 of P.L.1989, c.34 (C.13:1E-48.3) that accepts regulated medical waste for disposal, including a medical waste incinerator, that is attendant to a hospital or university and intended to process self-generated regulated medical waste.

“Limited English proficiency” means that a household does not have an adult that speaks English “very well” according to the United States Census Bureau.

“Low-income household” means a household that is at or below twice the poverty threshold as that threshold is determined annually by the United States Census Bureau.

“Major source” means a major source of air pollution as defined by the federal “Clean Air Act,” 42 U.S.C. s.7401 et seq., or in rules and regulations adopted by the department pursuant to the “Air Pollution Control Act,” P.L.1954, c.212 (C.26:2C-1 et seq.) or which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant, or other applicable criteria set forth in the federal “Clean Air Act,” 42 U.S.C. s.7401 et seq.

“Overburdened community” means any census block group, as determined in accordance with the most recent United States Census, in which: (1) at least 35 percent of the households qualify as low-income households; (2) at least 40 percent of the residents identify as minority or as members of a State recognized tribal community; or (3) at least 40 percent of the households have limited English proficiency.

“Permit” means any individual permit, registration, or license issued by the department to a facility establishing the regulatory and management requirements for a regulated activity under the following State laws: R.S.12:5-1 et seq.; P.L.1975, c.232 (C.13:1D-29 et al.); the “Solid Waste Management Act,” P.L.1970, c.39 (C.13:1E-1 et seq.); section 17 of P.L.1975, c.326 (C.13:1E-26); the “Comprehensive Regulated Medical Waste Management Act,” P.L.1989, c.34 (C.13:1E-48.1 et al.); P.L.1989, c.151 (C.13:1E-99.21a et al.); the “New Jersey Statewide Mandatory Source Separation and Recycling Act,” P.L.1987, c.102 (C.13:1E-99.11 et al.); the “Pesticide Control Act of 1971,” P.L.1971, c.176 (C.13:1F-1 et seq.); “The Wetlands Act of 1970,” P.L.1970, c.272 (C.13:9A-1 et seq.); the “Freshwater Wetlands Protection Act,” P.L.1987, c.156 (C.13:9B-1 et al.); the “Coastal Area Facility Review Act,” P.L.1973, c.185 (C.13:19-1 et seq.); the “Highlands Water Protection and Planning Act,” P.L.2004, c.120 (C.13:20-1 et seq.), the “Air Pollution Control Act (1954),” P.L.1954, c.212 (C.26:2C-1 et seq.); the “Water Supply Management Act,” P.L.1981, c.262 (C.58:1A-1 et al.); P.L.1947, c.377 (C.58:4A-5 et seq.); the “Water Pollution Control Act,” P.L.1977, c.74 (C.58:10A-1 et seq.); P.L.1986, c.102 (C.58:10A-21 et seq.); or the “Flood Hazard Area Control Act,” P.L.1962, c.19 (C.58:16A-50 et seq.); except that “permit” shall not include any authorization or approval necessary to perform a remediation, as defined pursuant to section 23 of P.L.1993, c.139 (C.58:10B-1), or any authorization or approval

required for a minor modification of a facility's major source permit for activities or improvements that do not increase emissions.

C.13:1D-159 List of overburdened communities on website.

3. No later than 120 days after the effective date of this act, the department shall publish and maintain on its Internet website a list of overburdened communities in the State. The department shall update the list of overburdened communities at least once every two years. The department shall notify a municipality if any part of the municipality has been designated an overburdened community pursuant to this act.

C.13:1D-160 Requirements for permit applicants.

4. a. Beginning immediately upon the adoption of the rules and regulations required pursuant to section 5 of this act, the department shall not consider complete for review any application for a permit for a new facility or for the expansion of an existing facility, or any application for the renewal of an existing facility's major source permit, if the facility is located, or proposed to be located, in whole or in part, in an overburdened community, unless the permit applicant first:

(1) Prepares an environmental justice impact statement that assesses the potential environmental and public health stressors associated with the proposed new or expanded facility, or with the existing major source, as applicable, including any adverse environmental or public health stressors that cannot be avoided if the permit is granted, and the environmental or public health stressors already borne by the overburdened community as a result of existing conditions located in or affecting the overburdened community;

(2) Transmits the environmental justice impact statement required to be prepared pursuant to paragraph (1) of this subsection, at least 60 days in advance of the public hearing required pursuant to paragraph (3) of this subsection, to the department and to the governing body and the clerk of the municipality in which the overburdened community is located. Upon receipt, the department shall publish the environmental justice impact statement on its Internet website; and

(3) Organizes and conducts a public hearing in the overburdened community. The permit applicant shall publish a notice of the public hearing in at least two newspapers circulating within the overburdened community, including one local non-English language newspaper, if applicable, not less than 60 days prior to the public hearing. The permit applicant shall provide a copy of the notice to the department, and the department shall publish the notice on its Internet website and in the monthly bulletin published pursuant to section 6 of P.L.1975, c.232 (C.13:1D-34). The notice of the public hearing shall provide the date, time, and location of the public hearing, a description of the proposed new or expanded facility or existing major source, as applicable, a map indicating the location of the facility, a brief summary of the environmental justice impact statement, information on how an interested person may review a copy of the complete environmental justice impact statement, an address for the submittal of written comments to the permit applicant, and any other information deemed appropriate by the department. At least 60 days prior to the public hearing, the permit applicant shall send a copy of the notice to the department and to the

governing body and the clerk of the municipality in which the overburdened community is located. The applicant shall invite the municipality to participate in the public hearing. At the public hearing, the permit applicant shall provide clear, accurate, and complete information about the proposed new or expanded facility, or existing major source, as applicable, and the potential environmental and public health stressors associated with the facility. The permit applicant shall accept written and oral comments from any interested party, and provided an opportunity for meaningful public participation at the public hearing. The permit applicant shall transcribe the public hearing and, no later than 10 days after the public hearing, submit the transcript along with any written comments received, to the department. Following the public hearing, the department shall consider the testimony presented and any written comments received, and evaluate the issuance of, or conditions to, the permit, as necessary in order to avoid or reduce the adverse environmental or public health stressors affecting the overburdened community.

The department may require the applicant to consolidate the public hearing held pursuant to this paragraph with any other public hearing held or required by the department regarding the permit application, provided the public hearing meets the other requirements of this paragraph. The department shall consider a request by a permit applicant to consolidate required public hearings and, if the request is granted by the department, the consolidation shall not preclude an application from being deemed complete for review pursuant to subsection a. of this section.

b. Notwithstanding the provisions of P.L.1975, c.232 (C.13:1D-29 et seq.) or any other law, or rule or regulation adopted pursuant thereto, to the contrary, the department shall not issue a decision on an application for a permit for a new facility or for the expansion of an existing facility, or on an application for the renewal of an existing facility's major source permit, if such facility is located, or proposed to be located, in whole or in part in an overburdened community until at least 45 days after the public hearing held pursuant to paragraph (3) of subsection a. of this subsection.

c. Notwithstanding the provisions of any other law, or rule or regulation adopted pursuant thereto, to the contrary, the department shall, after review of the environmental justice impact statement prepared pursuant to paragraph (1) of subsection a. of this section and any other relevant information, including testimony and written comments received at the public hearing, deny a permit for a new facility upon a finding that approval of the permit, as proposed, would, together with other environmental or public health stressors affecting the overburdened community, cause or contribute to adverse cumulative environmental or public health stressors in the overburdened community that are higher than those borne by other communities within the State, county, or other geographic unit of analysis as determined by the department pursuant to rule, regulation, or guidance adopted or issued pursuant to section 5 of this act, except that where the department determines that a new facility will serve a compelling public interest in the community where it is to be located, the department may grant a permit that imposes conditions on the construction and operation of the facility to protect public health.

d. Notwithstanding the provisions of any other law, or rule or regulation adopted pursuant thereto, to the contrary, the department may, after review of the environmental

justice impact statement prepared pursuant to paragraph (1) of subsection a. of this section and any other relevant information, including testimony and written comments received at the public hearing, apply conditions to a permit for the expansion of an existing facility, or the renewal of an existing facility's major source permit, concerning the construction and operation of the facility to protect public health, upon a finding that approval of a permit or permit renewal, as proposed, would, together with other environmental or public health stressors affecting the overburdened community, cause or contribute to adverse cumulative environmental or public health stressors in the overburdened community that are higher than those borne by other communities within the State, county, or other geographic unit of analysis as determined by the department pursuant to rule, regulation, or guidance adopted or issued pursuant to section 5 of this act.

e. If a permit applicant is applying for more than one permit for a proposed new or expanded facility, the permit applicant shall only be required to comply with the provisions of this section once, unless the department, in its discretion, determines that more than one public hearing is necessary due to the complexity of the permit applications necessary for the proposed new or expanded facility. Nothing in this section shall be construed to limit the authority of the department to hold or require additional public hearings, as may be required by any other law, rule, or regulation.

f. Nothing in this section shall be construed to limit the right of an applicant to continue facility operations during the process of permit renewal to the extent such right is conveyed by applicable law, rule, or regulation, including the application shield provisions of the rules and regulations adopted pursuant to the "Air Pollution Control Act (1954)," P.L.1954, c.212 (C.26:2C-1 et seq.).

g. In addition to any other fee authorized by law, rule, or regulation, the department shall assess each permit applicant a reasonable fee in order to cover the department's costs associated with the implementation of this act, including costs to provide technical assistance to permit applicants and overburdened communities as needed to comply with this act.

C.13:1D-161 Rules, regulations.

5. a. The department shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) rules and regulations to implement the provisions of this act.

b. The department may issue a technical guidance for compliance with this act, which the department shall publish on its Internet website.

6. This act shall take effect immediately.

Approved September 18, 2020.



City of Newark

City Hall
920 Broad Street
Newark, New Jersey
07102

Master

File Number: 16-0803

File ID: 16-0803

Type: Ordinance

Status: Adopted

Version: 1

**Contract
No.:**

Controlling Body: Economic and
Housing
Development

Creation Date : 05/09/2016

File Name: Environmental Justice and Cumulative Impact
Ordinance

Final Action: 07/07/2016

Title label: AN ORDINANCE AMENDING TITLE 41, ZONING AND LAND USE REGULATIONS, REVISED GENERAL ORDINANCES OF THE CITY OF NEWARK, NEW JERSEY, 2000, AS AMENDED AND SUPPLEMENTED, BY ADDING A NEW CHAPTER 19 ENTITLED "ENVIRONMENTAL JUSTICE AND CUMULATIVE IMPACTS" TO PROVIDE ADDITIONAL INFORMATION TO THE NEWARK ENVIRONMENTAL COMMISSION, CENTRAL PLANNING BOARD AND ZONING BOARD OF ADJUSTMENT AND TO REQUIRE ADDITIONAL DOCUMENTATION FROM DEVELOPMENT APPLICANTS IN ORDER TO BUILD AN IMPROVED BASIS OF INFORMATION ON WHICH TO CREATE SOUND ENVIRONMENTAL AND LAND USE POLICY.

Notes:

Sponsors:

Enactment Date:

Attachments: 16-0803 - Executive Order 12898, 16-0803 - Executive Order #96 - Governor James McGreevey, 16-0803 - Executive Order #131 - Governor Jon S. Corzine, 16-0803 - N.J.S.A. 40.48-2, 16-0803 - N.J.S.A. 40.55D-2, 16-0803 - N.J.S.A. 40.55D-25, 16-0803 - N.J.S.A. 40.55D-27, 16-0803 - N.J.S.A. 40.55D-28, 16-0803 - N.J.S.A. 40.55D-70, 16-0803 - N.J.S.A. 40.56A-1, 16-0803 - N.J.S.A. 40.56A-2, 16-0803 - N.J.S.A. 40.56A-6, F-e proof published 062216, 16-0803 Certified Ordinance.pdf, 16-0803 Mayor's Press Release.pdf, 16-0803 Affidavit of Publication.pdf, 16-0803 affidavit of publication, 16-0803 distribution letters

Enactment Number:

Contact:

Drafter: crumpl@ci.newark.nj.us

Hearing Date:

Effective Date:

History of Legislative File

Ver- sion:	Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Date:	Result:
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1		06/15/2016	advanced to first reading	
1	Municipal Council	06/15/2016	Advanced and adopted on first reading	Pass
1	Municipal Council	06/15/2016		
1	Municipal Council	07/07/2016	closed on public hearing and adopted	Pass

Text of Legislative File 16-0803

AN ORDINANCE AMENDING TITLE 41, ZONING AND LAND USE REGULATIONS, REVISED GENERAL ORDINANCES OF THE CITY OF NEWARK, NEW JERSEY, 2000, AS AMENDED AND SUPPLEMENTED, BY ADDING A NEW CHAPTER 19 ENTITLED "ENVIRONMENTAL JUSTICE AND CUMULATIVE IMPACTS" TO PROVIDE ADDITIONAL INFORMATION TO THE NEWARK ENVIRONMENTAL COMMISSION, CENTRAL PLANNING BOARD AND ZONING BOARD OF ADJUSTMENT AND TO REQUIRE ADDITIONAL DOCUMENTATION FROM DEVELOPMENT APPLICANTS IN ORDER TO BUILD AN IMPROVED BASIS OF INFORMATION ON WHICH TO CREATE SOUND ENVIRONMENTAL AND LAND USE POLICY.

WHEREAS, the City of Newark ("the City") seeks to promote the health and welfare of those who live, work, do business, and visit within the City, and to protect the quality of the urban environment for the benefit of current and future generations; and

WHEREAS, conditions affecting the existing structures built, natural and social environments in Newark have an impact on human health and welfare, and may in some cases contribute to illness or mortality if left unaddressed; and

WHEREAS, existing environmental conditions reflect a history of industrial use that includes a number of sources of pollution such as: a dense transportation network including highways, a major seaport and airport, and rail hubs; regional infrastructure for transporting and incinerating solid waste and processing wastewater; current industrial and commercial uses with significant environmental impacts from operations and contaminated properties, all of which may have an adverse impact on human health and the environment; and

WHEREAS, patterns of racial, ethnic and economic inequality in the United States result in the geographic concentration of environmentally hazardous land uses and sources of pollution that disproportionately burden the health of low-income communities and communities of color, including communities in Newark, which outcome is known as environmental injustice, and which has been addressed in federal and state policy through Presidential Executive Order 12898, State of New Jersey Executive Order #96 (February

18, 2004), and State of New Jersey Executive Order #131 (February 5, 2009); and

WHEREAS, the City is one of approximately fifty communities identified by the U.S. Environmental Protection Agency (“EPA”) as “environmentally overburdened, underserved, and economically distressed” as part of EPA’s “Making a Visible Difference in Communities” strategic priority; and

WHEREAS, the City has been recognized by the New Jersey Department of Environmental Protection as an area where there are “disproportionate impacts from multiple sources of pollution;” and

WHEREAS, measurements to determine “non-attainment” with federal ambient air quality standards are taken at the regional level such that it is possible for particular neighborhoods or groups of neighborhoods to experience high levels of exposure to criteria pollutants even if the concentration of those pollutants is deemed acceptable for the region as a whole; and

WHEREAS, the combined total effect of many sources of pollution, from stationary sources such as power plants to mobile sources such as cars and trucks creates a cumulative impact that may be more harmful to human health than the impact of any one source of pollution in isolation; and

WHEREAS, State law and regulation on environmental pollution currently focuses primarily on individual rather than cumulative impacts from proposed projects when assessing eligibility for permits related to the environment, limiting the ability of State agencies to provide protection from the cumulative impacts of pollution on human health; and

WHEREAS, the City wishes to create stronger environmental and land use policy tools at the local level to prevent and mitigate additional pollution associated with new development projects; and

WHEREAS, the creation of such stronger policy tools is permitted for municipalities under State laws that provide for municipal oversight of decisions on land use, including those pertaining to environmental health via N.J.S.A. 40:48-2, which states, “Any municipality may make, amend...and enforce such ordinances, regulations, rules and by-laws not contrary to the laws of this State or of the United States, as it may deem necessary and proper for the good government, order and protection of persons and property, and for the preservation of the public health, safety and welfare of the municipality and its inhabitants...” and via the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., which authorizes municipalities to “guide the appropriate use or development of all lands in this State, in a manner which will promote the public health, safety, morals and general welfare,” and to “secure safety from fire, flood, panic and other natural and man-made disasters,” to “promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods,

communities and regions and preservation of the environment,” ”to “promote the conservation of...open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of land,” among other goals and purposes; and

WHEREAS, the Municipal Land Use Law, at N.J.S.A. 40:55D-28b, provides: “The master plan shall generally comprise a report or statement and land use and development proposals, with maps, diagrams and text, presenting...where appropriate, the following elements...: (9) An economic plan element considering all aspects of economic development and sustained economic vitality, including (a) a comparison of the types of employment expected to be provided by the economic development to be promoted with the characteristics of the labor pool resident in the municipality and nearby areas and (b) an analysis of the stability and diversity of the economic development to be promoted; ...(16) A green buildings and environmental sustainability plan element, which shall provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on-site; and optimize climatic conditions through site orientation and design”; and

WHEREAS, it is the express intent of Newark’s Master Plan, adopted September 24, 2012, to “prevent additional air pollution, especially in overburdened neighborhoods, and mitigate existing polluting sources” by “reduc[ing] vehicle idling and emissions,” by requiring “facilities infrastructure improvements to avoid truck idling,” by “adopt[ing] land use and zoning rules that increase the efficiency of truck travel and minimize the impact of diesel emissions on vulnerable populations,” by “amend[ing] the zoning ordinance to screen new projects for cumulative impacts on air quality,” for the purpose of helping Newark “[b]ecome a ‘city of choice’ where a diverse range of people will want to live, work, learn, and play by improving environmental quality...,” and

WHEREAS, Newark’s Master Plan recognizes that “[i]n collecting information about air quality and greenhouse gas emissions, the City can measure whether its policies are having a positive impact on human safety and livability”; and

WHEREAS, it is the express intent of Newark’s Master Plan to address adverse impacts on groundwater and soil from stormwater runoff; and

WHEREAS, it is the express intent of Newark’s Master Plan to “move toward becoming a ‘zero waste’ city - a place that burns and buries as close to nothing as possible;” and

WHEREAS, pursuant to the Municipal Land Use Law, at N.J.S.A. 40:55D-25 b., “The Planning Board may...(2) Assemble data on a continuing basis as part of a continuous planning process;” and “(3) Perform such other advisory duties as are assigned to it by ordinance or resolution of the Governing Body for the aid and assistance of the

Governing Body or other agencies or officers”; and

WHEREAS, pursuant to the Municipal Land Use Law, at N.J.S.A. 40:55D-70, “No variance or other relief may be granted...without a showing that such variance or other relief can be granted without substantial detriment to the public good and will not substantially impair the intent and the purpose of the zone plan and zoning ordinance;” and

WHEREAS, the Newark Environmental Commission was established pursuant to N.J.S.A. 40:56A-1 to 40:56A-12 “for the protection, development or use of natural resources,” and empowered to “to conduct research into the use and possible use of the open land areas of the municipality,” and “may...prepare, print, and distribute books, maps, charts, plans and pamphlets which in its judgment it deems necessary for its purposes...and may from time to time recommend to the Planning Board... plans and programs for inclusion in a master plan and the development and use of such areas;” and

WHEREAS, pursuant to Section 2:2-41.4c. of the Municipal Code of the City of Newark, the Newark Environmental Commission is further charged with establishing its own “priorities with due consideration of the City’s needs for...a Green City Plan which addresses the need for sustainable development and the reduction of air pollutants in the City;” and

WHEREAS, the Newark Environmental Commission has the power pursuant to N.J.S.A. 40:56A-6 to “study and make recommendations concerning open space preservation, water resources management, air pollution control, solid waste management, noise control, soil and landscape protection, environmental appearance, marine resources and protection of flora and fauna;” and

WHEREAS, N.J.S.A. 40:55D-27b. provides that “whenever the Environmental Commission has prepared and submitted to the Planning Board and Board of Adjustment an index of the natural resources of the municipality, the Planning Board or the Board of Adjustment shall make available to the Environmental Commission an informational copy of every application for development submitted to either board;” and

WHEREAS, the Newark Environmental Commission intends to prepare and submit such an index in the form of a Natural Resources Index as described below; and

WHEREAS, the Association of New Jersey Environmental Commissioners has expressed support for the Newark Environmental Commission in advising the Planning Board and Zoning Board of Adjustments on the environmental impact of proposed development projects, which support it currently provides to a number of New Jersey municipalities; and

WHEREAS, additional information about environmental impacts of proposed new development projects in the context of the cumulative impact of all pre-existing development, along with advisory input from the Newark Environmental Commission on

same, will assist City policy-makers and the public in advancing goals expressed in the Newark Master Plan and Sustainability Action Plan and improving long-term planning.

NOW, THEREFORE, BE IT ORDAINED BY THE MUNICIPAL COUNCIL OF THE CITY OF NEWARK, NEW JERSEY, THAT:

Section 1. Amend Title 41, Zoning and Land Use Regulations of the Revised General Ordinances of the City of Newark, New Jersey, 2000, as amended and supplemented, by adding a new Chapter 19, Environmental Justice and Cumulative Impact shall include the following:

1.1 . Purpose: The City of Newark Municipal Code is hereby amended to include the requirements enumerated herein, which shall assist the Environmental Commission, Newark Central Planning Board and Zoning Board of Adjustment in better understanding the environmental impacts of development projects, and support improved long-term planning in order to enhance, protect and preserve a healthy urban environment for the benefit of all present and future residents and workers.

1.2. Policy Statement: The goal of the Environmental Justice & Cumulative Impacts Ordinance is to advance Environmental Justice (as defined herein), good stewardship, and sustainable economic development in furtherance of the priorities outlined in the Newark Sustainability Action Plan and the Newark Master Plan. Through this Ordinance, the City of Newark seeks to:

- a. Protect the health of all residents, regardless of race, culture or income, from exposure to pollution linked to adverse health effects, including the cumulative impacts that may be worsened as an unintended by-product of new development or redevelopment, and to ensure the enforcement of laws, regulations, and policies in a manner consistent with the principles of Environmental Justice.
- b. Take appropriate action to avoid, minimize and mitigate pollution from all sources within Newark's jurisdiction through partnerships, innovation, and enforcement.
- c. Encourage proposals for development or redevelopment that contribute positively to Newark's environmental, economic, and social health or, at minimum, that do not contribute net new pollution to the environment or adversely impact public health.
- d. To the extent permitted by law, discourage and advocate against development or redevelopment proposals that contribute net additional pollution; particularly, types of pollution linked to human health problems, and avoid taking actions or decisions that add to the total amount of pollution impacting an area deemed disproportionately impacted by pre-existing pollution.
- e. To create a better basis of information for decision-making with regard to

public health and the environment with regard to new project proposals, and to require development and redevelopment applicants seeking approval for projects that have the potential to generate additional pollution to provide information in the form of an Environmental Review Checklist as provided herein, which shall be added to the checklist requirements and provided to development and redevelopment applicants pursuant to N.J.S.A. 40:55D-10.3.

f. To create a better basis of information for decision-making with regard to public health, the environment and pre-existing pollution by developing a Natural Resources Index that identifies areas that can be considered disproportionately burdened with existing pollution pursuant to standards of Environmental Justice and that, upon approval, will become a required reference document for the Environmental Review Checklist.

g. Promote meaningful public participation and transparent decision-making by identifying risks to public health and the environment, and by providing an opportunity to select alternatives and/or mitigation measures that remedy, avoid or minimize such risks.

1.3. Definitions

a. **Covered Applicant** - Shall mean an applicant for major site plan approval from the Newark Central Planning Board or a variance from the Newark Zoning Board of Adjustment that (i) is seeking approval for a Commercial, Light Manufacturing or Industrial Use project, as defined under Paragraphs 3.g, 3.h and 3.i hereinafter; and (ii) requires one or more approvals or permits from the U.S. Environmental Protection Agency ("EPA") or the New Jersey Department of Environmental Protection, or requires inclusion in the Essex County Solid Waste Management Plan, upon advice from the Essex County Solid Waste Advisory Council. Said approvals or permits shall include, but shall not be limited to, any approval or permit required pursuant to the Clean Air Act, 42 U.S.C. §7401 et seq.; the Clean Water Act, 33 U.S.C. §1251 et seq. (including any approval or permit issued thereunder by the U.S. Army Corps of Engineers); the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq.; the New Jersey Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq.; the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.; the Water Quality Planning Act, N.J.S.A. 58:11A-1, et seq.; the Waterfront Development Law, N.J.S.A. 12:5-3 et seq.; the Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq.; the Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 et seq. and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. A Covered Applicant shall include an applicant that is seeking approval for a mixed-use project which includes a residential use.

b. **Criteria Pollutants** - Shall mean any pollutants listed by the EPA Administrator pursuant to Section 108(a) of the Clean Air Act, 42 USC Section 7408(a) as Criteria Air Pollutants which includes carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution (PM 10 and PM 2.5) and sulfur dioxide.

c. Environmental Justice - Shall mean the fair treatment of and right of all persons, regardless of race, color, national origin, ethnicity, income or other demographic or geographic characteristics, to have access to a safe, healthy living environment. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear disproportionately high exposure to pollution or adverse human health or environmental impacts, which disproportionately high exposure is known as Environmental Injustice, as further described in Presidential Executive Order 12898, State of New Jersey Executive Order #96 (February 18, 2004), and State of New Jersey Executive Order #131 (February 5, 2009).

d. Natural Resources Index (“NRI”) - Shall mean a document that compiles and analyzes information about baseline environmental and socio-economic conditions in the City of Newark, for purposes of long-term planning that promotes public health, vibrant communities, and sustainable economic development. The NRI may include maps, tables, and narrative describing the extent, type, and location of factors that may affect environmental health both positively and negatively.

e. Hazardous Air Pollutants - Shall mean any air pollutants listed in Section 112(b) of the Clean Air Act, 42 USC 7412(b) and amended by 40 CFR 63, Subpart C.

f. Environmental Review Checklist (“Checklist”) - Shall mean an informational document covering specific environmental impact information, as specified herein, that must be submitted by Covered Applicants in addition to other required submissions for major site plan approval from the Newark Central Planning Board or approval of a variance from the Zoning Board of Adjustment. This document shall provide information to be used by the Newark Environmental Commission, City staff and members of the Central Planning Board and Zoning Board of Adjustment to improve public understanding of the potential cumulative environmental impacts of proposed development and provide a basis for more informed policy decisions on municipal land use. This Checklist will be in the format attached hereto as Exhibit A.

g. Commercial - shall have the same definition as provided in the Newark Zoning and Land Use Regulations, Title 41, Chapter 2.

h. Industrial - shall have the same definitions for “Manufacturing, Heavy,” and “Manufacturing, Medium” as provided in the Newark Zoning and Land Use Regulations, Title 41, Chapter 2.

i. Light Manufacturing - shall have the same definition as provided in the Newark Zoning and Land Use Regulations, Title 41, Chapter 2.

j. Greenhouse Gas - shall have the same definition as provided in the Global Warming Response Act, N.J.S.A. 26:2C-37 et seq.

k. Administrative Officer - shall generally mean the respective Board Secretary or Board Clerk assigned to receive applications and plan documents on behalf of the Central Planning Board or Zoning Board of Adjustment.

1.4. Natural Resources Index (NRI)

a. The Newark Environmental Commission, in consultation with City of Newark departmental staff, as coordinated by the Mayor's Office of Sustainability, is hereby directed to research, draft, and present to the Planning Board and Zoning Board of Adjustment a Natural Resources Index (NRI), pursuant to N.J.S.A. 40:55D-27b. The NRI will include data on built, natural, environmental, health and demographic features that occur within Newark's boundaries. The NRI will also seek to make visible to the public geospatial information about environmental features, both positive and negative, as juxtaposed to demographic and health data, in order to develop a better understanding of the relationships among environment, land use, public health, and neighborhood quality of life. The NRI is intended to be a work in progress, bringing diverse sources of information together to form the basis of improved policy making over time. The NRI shall include information on:

(i) Natural resources and physical infrastructure within the boundaries of the City of Newark, including but not limited to: highways, railyards, railways, roadways, designated truck routes, industrial areas, seaports, airports, utilities, waterways, trees, parks, wetlands, and gardens;

(ii) Available health indicators data, including asthma rates, lung cancer, low birth weight infants, cardiovascular disease, and other illnesses associated with environmental hazards;

(iii) Existing permitted, point, non-point and area sources of pollution, toxins registered or required to be registered with the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq., Superfund (CERCLA) and Brownfield sites, hazardous waste storage facilities, and other known sources of pollution affecting Newark residents, which may be obtained from City, federal or state databases such as those created or maintained by the EPA;

(iv) Location of vulnerable populations and land uses, including flood zones, location of schools, daycares, senior centers, hospitals, jails, dialysis centers, recreation centers, public housing and detention centers;

(v) Data on socio-economic conditions of residents, including poverty, income, race, ethnicity, gender, unemployment, and age including information on the number and location of residents over 65 and under 5 years old;

(vi) Any other information deemed appropriate or necessary by the Newark Environmental Commission.

b. An NRI shall be developed and approved by the Newark Environmental Commission within twelve (12) months of the passage of this Ordinance. The approved NRI shall be forwarded to the Planning and Zoning Boards.

- c. The Newark Environmental Commission shall organize and hold at least one public hearing to solicit public information and increase public awareness on the NRI prior to preparation of the final draft thereof.
- d. The NRI shall be updated every three years.
- e. The NRI shall be a required reference document for any Environmental Review Checklist submitted following the publication of an approved version of the NRI by the City of Newark.

1.5. Newark Environmental Review Checklist (“Checklist”):

- a. Covered Applicants shall prepare and submit an Environmental Review Checklist to the Planning Board or Zoning Board, as appropriate, as a required component of any application for major site plan approval or for a variance in the form attached to this Ordinance as Exhibit A. The checklist for projects which meet the criteria of Paragraph 3.a hereof shall be amended to include said Environmental Review Checklist and shall be provided to all Covered Applicants.
- b. In the event that the Covered Applicant fails to submit a complete Environmental Review Checklist, the application shall be deemed incomplete.
- c. A conforming copy of the Environmental Review Checklist shall also be submitted by the Covered Applicant to the Administrative Officer within the Newark Planning Office.
- d. Upon receipt, the Administrative Officer shall forward a copy of the Environmental Review Checklist to the Chair(s) of the Newark Environmental Commission, the Director of the Office of Sustainability, the Director of Engineering, the Director of Community Health and Wellness, and the Director of Neighborhood and Recreational Services or its successor Department. The Environmental Review Checklist will be made available as part of the complete major site plan application or variance application to members of the public.
- e. Upon receipt of the Newark Environmental Review Checklist, the Newark Environmental Commission members shall review the material and provide a written advisory opinion as soon as reasonably practicable to the Secretary of the Boards for transmittal to the members of the Planning Board or Zoning Board of Adjustment, as appropriate.
- f. Nothing in this Ordinance shall limit the statutory powers of the Planning Board or Zoning Board of Adjustment under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq.
- g. Nothing in this ordinance shall limit the statutory powers of the Newark Environmental Commission under Title 40, Chapter 56A, of the New Jersey Statutes.

1.6. Escrow Fees for Covered Redevelopment Projects:

- a. For projects which meet the criteria of Paragraph 3.a. hereof, and which are also redevelopment projects subject to a redevelopment plan adopted

pursuant to the Local Redevelopment and Housing Law, N.J.S.A. 40A:12A-1 et seq., a Covered Applicant shall be required, as a potential redeveloper, to comply with the provisions of the Chapter entitled “Escrow Fees for Redevelopment Matters” in Title 41 of the City of Newark Municipal Code entitled “NEWARK ZONING AND LAND USE REGULATIONS”

1.7. Environmental Justice Policy Review: Based on the trends and patterns in the NRI and the Environmental Review Checklists for each new development or redevelopment project, the Newark Environmental Commission shall make annual recommendations to the Mayor and the Municipal Council regarding projects and policies that may serve to (i) reduce health-harmful pollution, (ii) improve the environmental impacts of private development projects, and (iii) promote the adoption of best practices for reducing environmental impacts into City capital projects, as well as appropriate updates to the NRI.

Section 2. Exhibit A: Environmental Review Checklist

1. Cover Sheet

- Name of applicant entity
- Contact information (name, email, phone, address)
- Location of Proposed Project (address and block and lot)
- Summary description of proposed project (one paragraph only) including proposed dimensions of any buildings and total project cost
- Existing land use at project site and existing land use zoning designation
- Requested variance, if any

2. Permits:

- List of all Permits and Approvals needed
- Copy of any permits already obtained from the United States Environmental Protection Agency, the New Jersey Department of Environmental Protection, or evidence of inclusion in the Essex County Solid Waste Management Plan after advice of the Essex County Solid Waste Advisory Council.

3. BASIC FORM - For Covered Applicants with a Commercial or Light Manufacturing Use, including those uses within an MX-1 or MX-2 Zone

A. Environmental Impact Activities: Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for any category below, applicant shall identify such permit. Applicant shall provide information for a category only if a permit is involved for the

category. Applicant is not required to provide information for the residential component of a mixed-use project.

- i. **AIR POLLUTION:** Chart listing tons per year of all Criteria Pollutants and Hazardous Air Pollutants to be emitted as a result of project operation.
- ii. **STORMWATER RETENTION & DISCHARGE:** Brief narrative summary of on-site stormwater capture including total volume to be controlled; Brief narrative summary of permitted sewer and stormwater discharge including total volume to be discharged.
- iii. **HAZARDOUS or TOXIC MATERIALS:** List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law, such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A.34:5A-1 et seq. State whether an emergency management plan has been filed with the City's Office of Emergency Management.
- iv. **TRUCK TRIPS:** Estimated number of truck trips per day anticipated during normal operations. Indicate if trucks will be owned or contracted.
- v. **FUEL USE:** List type of fuel to be used for heating, cooling, and operations (e.g., Number 4 or 6 Heating Oil; Natural Gas, Solar or Wind)
- vi. **HAZARDOUS AND SOLID WASTE & RECYCLING:** Provide copy of applicable Waste Permit or application, if applicable and available. Brief narrative description of plan for compliance with City of Newark Recycling Ordinance Title XV, Chapter 12.

B. Optional - Additional Information on Environmental Mitigation Activities:

At the applicant's discretion, information may be submitted to highlight elements of design, construction or operation intended to mitigate, minimize, or avoid negative environmental impacts. Information should be in the form of a brief narrative description in each relevant category. The list below is intended to serve as a suggested menu of possible topics and is not exhaustive.

- i. Air pollution reduction technologies for stacks, exhaust pipes, cooking equipment, or other such equipment or facilities
- ii. On-site or off-site Green Stormwater Infrastructure
- iii. Energy efficiency or renewable energy elements
- iv. Waste minimization or re-use programs
- v. Water conservation measures
- vi. Green supply chain efforts
- vii. Clean fleet (alternative fuel, retrofitted diesel engines, or other such fuel types or engines)
- viii. Indoor air quality controls

- ix. Plans to minimize noise, dust, odor and light pollution
- x. Public space design and landscaping elements
- xi. Voluntary arrangement to provide a first-interview opportunity for employment to Newark residents, beyond that required by Newark ordinances
- xii. Voluntary contribution (in-kind or funding) to support community initiatives
- xiii. Measures taken to inform or engage neighbors about the project prior to submission of plans

4. FULL FORM - For Covered Applicants with an Industrial Use:

A. Detailed Project Description: Brief summary of types of products or services to be produced, a physical description of proposed building and grounds, including any pre-improvement contamination issues and clean-up plans, and overview of anticipated environmental impact, controls to comply with environmental regulations, and any voluntary activities undertaken to go beyond legally required environmental control standards.

B. Pre-existing Environmental Conditions Description: To the extent such information is available in an approved NRI, a brief summary of pre-existing environmental conditions within a half-mile radius of proposed project site, including name and location of any other properties in that area with air pollution emission permits from the federal or state government; location of known contaminated sites and properties storing or using toxic chemicals; location of receptor populations including schools, day-cares, residential blocks, detention centers or prisons, and senior centers; and location of any environmentally-sensitive areas such as wetlands, waterways or parks.

C. Environmental Impact Description: Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for the category below, applicant should identify such permit. Applicant must provide a description for each category regardless of whether a permit is involved, to the extent such information is available or can be readily obtained.

i. **AIR POLLUTION:** Chart listing tons per year of all Criteria Pollutants, Hazardous Air Pollutants, and Greenhouse Gas emission equivalents. Include maximum permitted tons per year and anticipated actual tons per year.

ii. **STORMWATER RETENTION & DISCHARGE:** Brief narrative summary of on-site stormwater capture including total volume to be controlled; Brief

narrative summary of permitted sewer and stormwater discharge including total volume to be discharged and any onsite treatment technology.

- iii. **WATER USE:** Estimate of volume of water to be used annually for operations.
- iv. **ENERGY USE:** Estimate of kilowatt hours of energy to be used annually for operations.
- v. **HAZARDOUS or TOXIC MATERIALS:** List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq. State whether an emergency m

SECTION E

ENVIRONMENTAL COMMISSION REVIEW

(No application will be deemed complete unless this section has been completed)

DOES THE PROPERTY REQUIRE ONE OR MORE APPROVALS OR PERMITS FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA), OR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, OR REQUIRE INCLUSION IN THE ESSEX COUNTY SOLID WASTE MANAGEMENT PLAN UPON ADVICE FROM THE ESSEX COUNTY SOLID WASTE ADVISORY COUNCIL? () YES () NO

[Said approvals or permits shall include, but shall not be limited to, any approval or permit required pursuant to the Clean Air Act, 42 U.S.C. §7401 et seq.; the Clean Water Act, 33 U.S.C. §1251 et seq. (including any approval or permit issued thereunder by the U.S. Army Corps of Engineers); the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq.; the New Jersey Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq.; the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.; the Water Quality Planning Act, N.J.S.A. 58:11A-1, et seq.; the Waterfront Development Law, N.J.S.A. 12:5-3 et seq.; the Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq.; the Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 et seq. and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.]

If yes, please list the approvals or permits required:

As per the Environmental Justice and Cumulative Impacts Ordinance (6PSF-e), adopted 7/7/16 and effective 7/27/16, a covered application for environmental commission review is any major site plan seeking approval from the Central Planning Board or the Zoning Board of Adjustment for a commercial, light manufacturing or industrial use project which also requires one or more approvals or permits from the U.S. Environmental Protection Agency or the New Jersey Department of Environmental Protection, or requires inclusion in the Essex County Solid Waste Management Plan, upon advice from the Essex County Solid Waste Advisory Council.

ENVIRONMENTAL COMMISSIONS REVIEW: BASIC FORM

For Covered Applicants with a Commercial or Light Manufacturing Use, including those uses within an MX-1 or MX-2 Zone. If more space is required, please attach additional responses to this form.

A. Environmental Impact Activities: Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for any category below, applicant shall identify such permit. Applicant shall provide information for a category only if a permit is involved for the category. Applicant is not required to provide information for the residential component of a mixed-use project.

I. AIR POLLUTION: Chart listing tons per year of all Criteria Pollutants and Hazardous Air Pollutants to be emitted as a result of project operation. (If more space is required, please attach an additional chart to this form).

Type:	Amount (tons per year):

II. STORMWATER RETENTION & DISCHARGE: Brief narrative summary of on-site stormwater capture including total volume to be controlled; brief narrative summary of permitted sewer and stormwater discharge including total volume to be discharged.

III. HAZARDOUS or TOXIC MATERIALS: List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law, such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A.34:5A-1 et seq. State whether an emergency management plan has been filed with the City's Office of Emergency Management.

IV. TRUCK TRIPS: Estimated number of truck trips per day anticipated during normal operations. Indicate if trucks will be owned or contracted.

V. FUEL USE: List type of fuel to be used for heating, cooling, and operations (e.g., Number 4 or 6 Heating Oil; Natural Gas, Solar or Wind)

VI. HAZARDOUS AND SOLID WASTE & RECYCLING: Provide copy of applicable Waste Permit or application, if applicable and available. Provide brief narrative description below of plan for compliance with City of Newark Recycling Ordinance Title XV, Chapter 12.

B. OPTIONAL: ADDITIONAL INFORMATION ON ENVIRONMENTAL MITIGATION ACTIVITIES:

At the applicant's discretion, information may be submitted to highlight elements of design, construction or operation intended to mitigate, minimize, or avoid negative environmental impacts. Such efforts may include but are not limited to:

- i. Air pollution reduction technologies for stacks, exhaust pipes, cooking equipment, or other such equipment or facilities
- ii. On-site or off-site green stormwater infrastructure
- iii. Energy efficiency or renewable energy elements
- iv. Waste minimization and/or re-use programs
- v. Water conservation measures
- vi. Green supply chain efforts
- vii. Clean fleet commitments (alternative fuel, retrofitted diesel engines, or other such fuel types or engines)
- viii. Indoor air quality controls
- ix. Plans to minimize noise, dust, odor and light pollution
- x. Public space design and landscaping elements
- xi. Voluntary arrangement to provide a first-interview opportunity for employment to Newark residents, beyond that required by Newark ordinances
- xii. Voluntary contribution (in-kind or funding) to support community initiatives
- xiii. Measures taken to inform or engage neighbors about the project prior to submission of plans

ENVIRONMENTAL COMMISSION REVIEW: FULL FORM

For Covered Applicants with an Industrial Use. If more space is required, please attach additional responses to this form.

- A. Detailed Project Description:** Brief summary of types of products or services to be produced, a physical description of proposed building and grounds, including any pre-improvement contamination issues and clean-up plans, and overview of anticipated environmental impact, controls to comply with environmental regulations, and any voluntary activities undertaken to go beyond legally required environmental control standards.

- B. Pre-existing Environmental Conditions Description:** To the extent such information is available in an approved NRI, a brief summary of pre-existing environmental conditions within a half-mile radius of proposed project site, including name and location of any other properties in that area with air pollution emission permits from the federal or state government; location of known contaminated sites and properties storing or using toxic chemicals; location of receptor populations including schools, day-cares, residential blocks, detention centers or prisons, and senior centers; and location of any environmentally-sensitive areas such as wetlands, waterways or parks.

- C. Environmental Impact Description:** Information should be excerpted from documents filed elsewhere; e.g., environmental permit applications, approved permits or stormwater management plans, as applicable. If project involves a permit for the category below, applicant should identify such permit. Applicant must provide a description for each category regardless of whether a permit is involved, to the extent such information is available or can be readily obtained.

i. AIR POLLUTION:

Chart listing tons per year of all Criteria Pollutants, Hazardous Air Pollutants, and Greenhouse Gas emission equivalents to be emitted as a result of project operation. Include maximum permitted tons per year and anticipated actual tons per year. (If more space is required, please attach an additional chart to this form).

Criteria Pollutants, Hazardous Air Pollutants, and Greenhouse Gas emission equivalents:	Maximum permitted tons/year	Anticipated actual tons/year

ii. STORMWATER RETENTION & DISCHARGE:

Brief narrative summary of on-site stormwater capture including total volume to be controlled; brief narrative summary of permitted sewer and stormwater discharge including total volume to be discharged and any onsite treatment technology.

iii. WATER USE:

Estimate of volume of water to be used annually for operations.

iv. ENERGY USE:

Estimate of kilowatt hours of energy to be used annually for operations.

v. HAZARDOUS or TOXIC MATERIALS:

List, including name and estimated quantity of, any substance used or stored on-site that must be registered with either the State or a local emergency responder office pursuant to State or Federal law such as the Toxics Release Inventory or the New Jersey Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq. State whether an emergency management plan has been filed with the City's Office of Emergency Management.

vi. TRUCK TRIPS:

Estimated number of truck trips per day anticipated during normal operations. Indicate if trucks will be owned or contracted. Provide information about how deliveries and pick-ups will comply with the City of Newark's truck route regulations.

vii. FUEL USE:

List type of fuel to be used for heating, cooling, and operations (e.g., Number 4 or 6 Heating Oil; Natural Gas, Solar or Wind)

viii. WASTE & RECYCLING:

Provide copy of applicable Waste Permit or application, if applicable and available. Provide brief narrative description of plan for compliance with City of Newark Recycling Ordinance Title XV, Chapter 12.

ix. NUISANCE ISSUES:

Provide a brief description of both projected impact of and plans to avoid, minimize, and control the following:

- a. Dust:

- b. Noise:

- c. Light:

- d. Odors:

D. Economic Opportunity Description: List estimated number of new jobs to be generated as a result of both construction and operation of the proposed project. Include a brief narrative description of any activities undertaken to provide Newark residents with access to these job opportunities.

E. Public Engagement Description: Briefly describe any efforts undertaken prior to filing for major site plan and/or variance approval to inform or engage the residents living and businesses operating in the vicinity of the proposed project.

F. Quality of Life and Public Health Protection Measures: Briefly describe any efforts to avoid, minimize, and mitigate any pollution emissions or environmental impacts both during construction and during operation. Such efforts may include but are not limited to:

- i. Pollution reduction technologies
- ii. Stormwater management via Green Infrastructure
- iii. Energy efficiency or renewable energy elements
- iv. Waste minimization and/or re-use program
- v. Water conservation measures
- vi. Green supply chain
- vii. Clean fleet commitments (2010 or newer truck engines, retrofit filters on older trucks, alternative fuel, zero emissions vehicles or other such commitments)
- viii. Indoor air quality controls
- ix. Tree canopy expansion or vegetative buffers
- x. Greenhouse Gas emission reduction technology or design

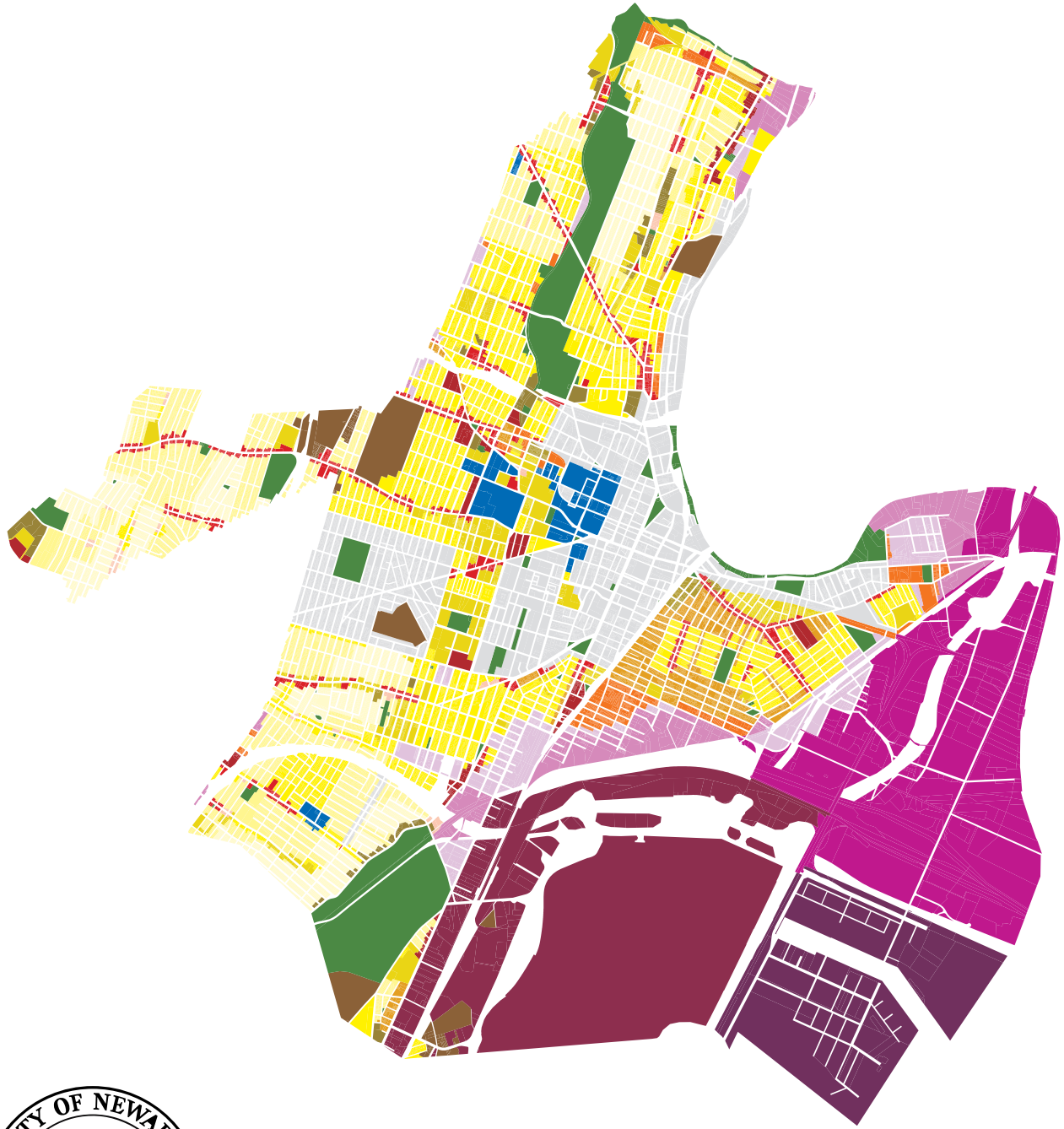
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G. Alternative Design (Optional): Provide a brief comparative description of at least one alternative design scheme, site location, engineered system, equipment choice or operational approach that was considered for reductions in negative environmental or public health impacts or increases in positive public impacts such as increased green space, energy reduction, air quality, water quality, stormwater runoff absorption and waste reduction.

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Newark Zoning & Land Use Regulations



NPO
NEWARK PLANNING OFFICE



City of Newark

Ras J. Baraka, Mayor

Municipal Council

Mildred C. Crump
Council Member, At-Large
Council President

Augusto Amador
Council Member, East Ward

Gayle Chaneyfield-Jenkins
Council Member, Central Ward

Carlos M. Gonzalez
Council Member, At-Large

John Sharpe James
Council Member, South Ward

Joseph McCallum, Jr.
Council Member, West Ward

Eddie Osborne
Council Member, At-Large

Luis A. Quintana
Council Member, At-Large

Anibal Ramos, Jr.
Council Member, North Ward

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others who offered feedback, suggestions & advice
on the rules contained in this document for building
the city we want. Respect to the ancestors & children.

Welcome to the Newark Zoning & Land Use Regulations (NZLUR), the rules for what you can build & where you can build it in Newark.

In these pages, you will find the law governing the use and design of buildings in Newark. You will also find regulations for many other parts of Newark's physical environment such as landscaping, parking lots, fences, signs, historic landmarks, and stormwater management.

The Newark Planning Office prepared the NZLUR in 2013 and 2014. While Newark's zoning had not been comprehensively revised since 1954, many things had changed in the following 60 years!

The NZLUR simplifies and modernizes the way Newark's zoning addresses the use of buildings. For example, the NZLUR eliminates outdated uses like leather tanneries and pool halls, and consolidates many uses based on avoiding nuisances and development conflicts.

The NZLUR also sets common-sense standards for how new buildings are designed. These measures grow from the successful 2009 implementation of zoning reforms for Newark's most common building types, two- and 3-family houses, which focused on improving the quality and safety of Newark's streets by setting standards for windows, front set-backs, and the location of primary entrances that keep eyes on the street.

This draft was presented to the Newark Central Planning Board at public hearings September 8 and November 10, 2014, and adopted by the Newark Municipal Council on February 4, 2015.

If you are interested in hosting Newark Zoning Workshop that breaks down these rules and what they mean for your neighborhood, call (973) 733-6333 or email newarkplanningoffice@gmail.com.

Beginner's Guide

The following resources are included in the NZLUR to help zoning beginners & professionals become familiar Newark's new zoning.

Page 4 Table of contents

Overview of the NZLUR's contents.

Page 6 Who Makes Decisions About What Gets Built in Newark?

This diagram, from the Newark Zoning Workshop, shows the process by which someone receives authorization for building in Newark. It provides a quick guide to the roles of the Central Planning Board, Zoning Board of Adjustment, and Landmarks & Historic Preservation Commission. Most importantly, it shows the important roles of the public in this process.

Page 7 Citywide Zoning & Neighborhoods Map

Use this map to see the overall pattern of zones in the city and to look up the map for your neighborhood on the more detailed maps that follow.

Page 8-31 Neighborhood Zoning Maps

These maps provide detailed zone maps for each neighborhood in Newark.

Page 32-49 Introduction to Zones

These one-page zone overviews introduce the general rules for each zone, which are provided in more detail in later NZLUR chapters.

Chapter 1. Purpose & intent

40:1-1. Enumeration of purposes

The purpose of this Title is to promote the health, safety and general welfare of the City of Newark and its people by advancing the purposes of the Municipal Land Use Law set forth at NJSA 40:55D-2 and by ensuring that all land development in the City meets the applicable requirements of Federal, State and local laws. In order to fulfill this purpose, it is the intent of this Chapter to provide regulations that are consistent with the City's Master Plan, that implement the Master Plan's Land Use Plan Element, and that advance the general concepts and recommendations of the Master Plan.

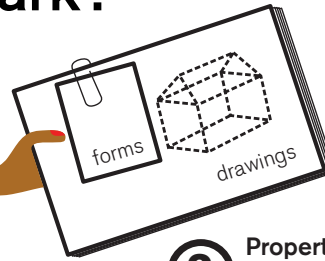
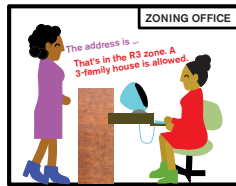
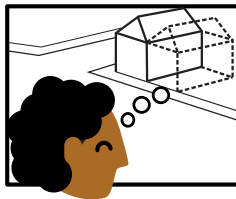
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Who makes decisions about what gets built in Newark?

1 Property Owner wants to build something.

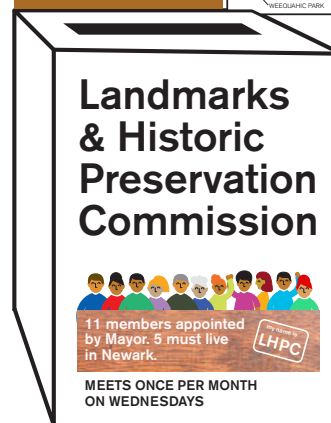
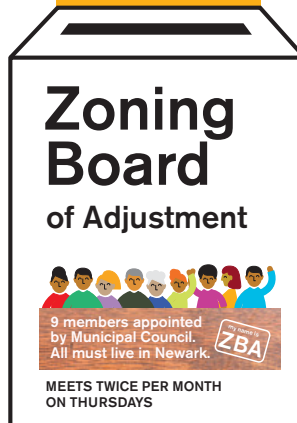


2 Property Owner files for planning approval(s)

If the proposed building generally follows zoning rules and is bigger than a 2-family house.

If the proposed building requires major exceptions to zoning rules.

If the proposed building is in a historic district or affects a landmark.

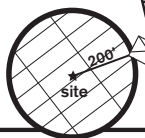


Planning & Boards, Engineering, and Water & Sewer staff review application. Once complete, the application is placed on the calendar.

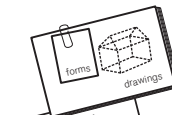
3 Hearing scheduled

4 Public Notice

For the CPB & ZBA, Property Owner is legally required to send advance notice about the hearing by mail to all other Property Owners within 200 feet of the proposed building and publish notice in the newspaper.



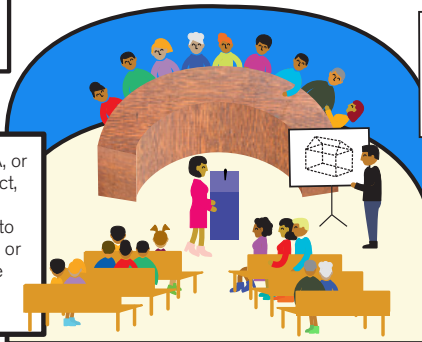
Once notice is published, at least 10 days before the public hearing, applications may be examined in City Hall Room 112.



the Public

5 Public Hearing

The case is heard by the CPB, ZBA, or LHPC. The Property Owner, architect, and engineer present the project, members of the public are allowed to speak for or against, and the Board or Commission approves or denies the application. Sometimes they place special conditions on the approval.



6 Building Permits

When the Property Owner applies for building permits from the Uniform Construction Code office, the plans are checked against the zoning approval. If they match, and the proposed construction meets building codes, permits are issued.

7 Construction

The Uniform Construction Code office inspects the completed project. If it passes, the building receives a Certificate of Occupancy and can be put into use.

8 Code Enforcement

If a property violates zoning law, residents can register complaints with Code Enforcement, which inspects the property and issues tickets if appropriate.



To learn more or receive agendas, call:

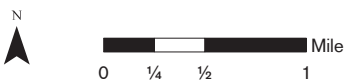
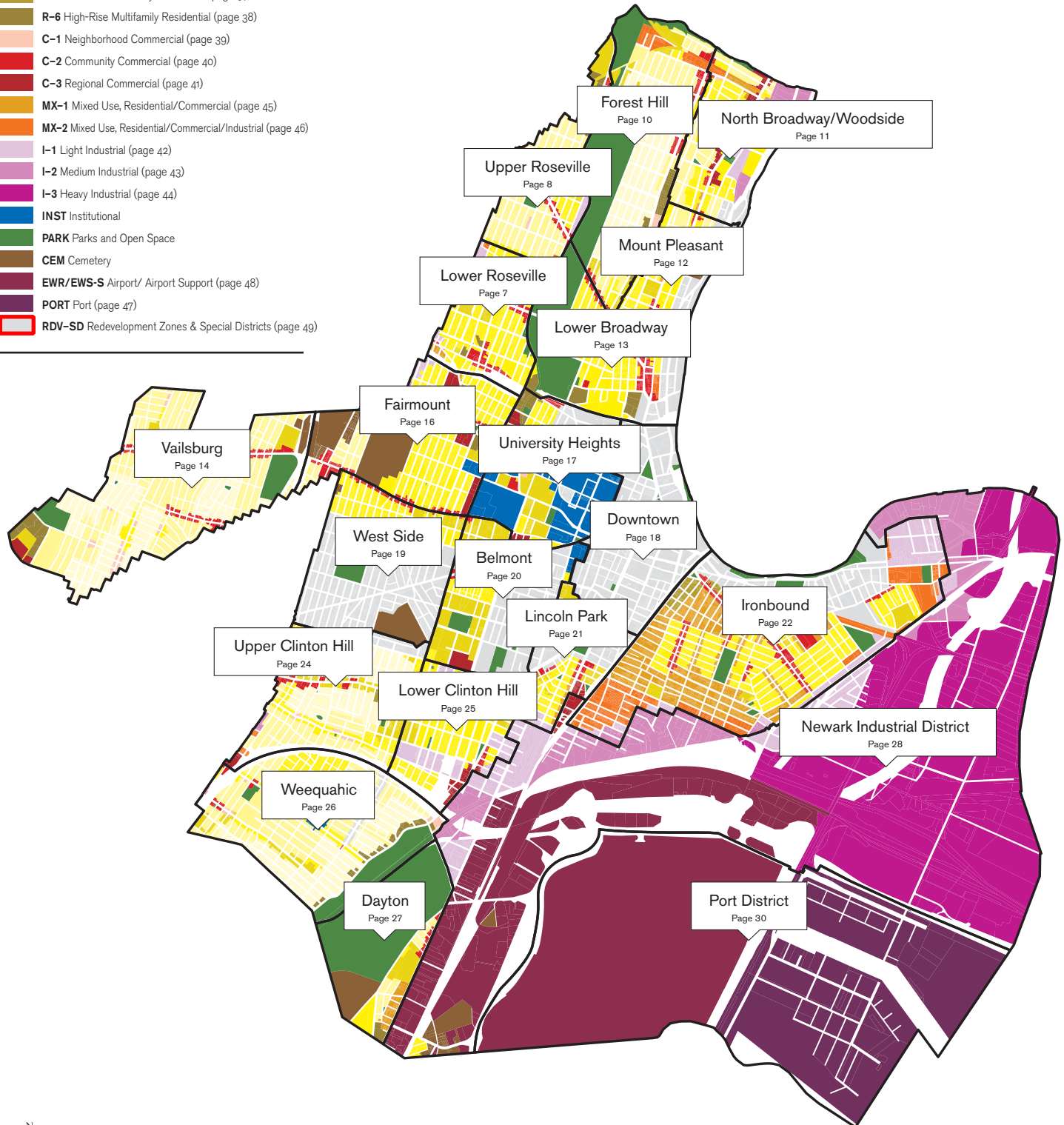
CPB, LHPC, & ZBA (973) 733-6333

To report zoning violations, call:

Code Enforcement (973) 733-5453

Newark Zoning & Neighborhoods

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Bloomfield Township



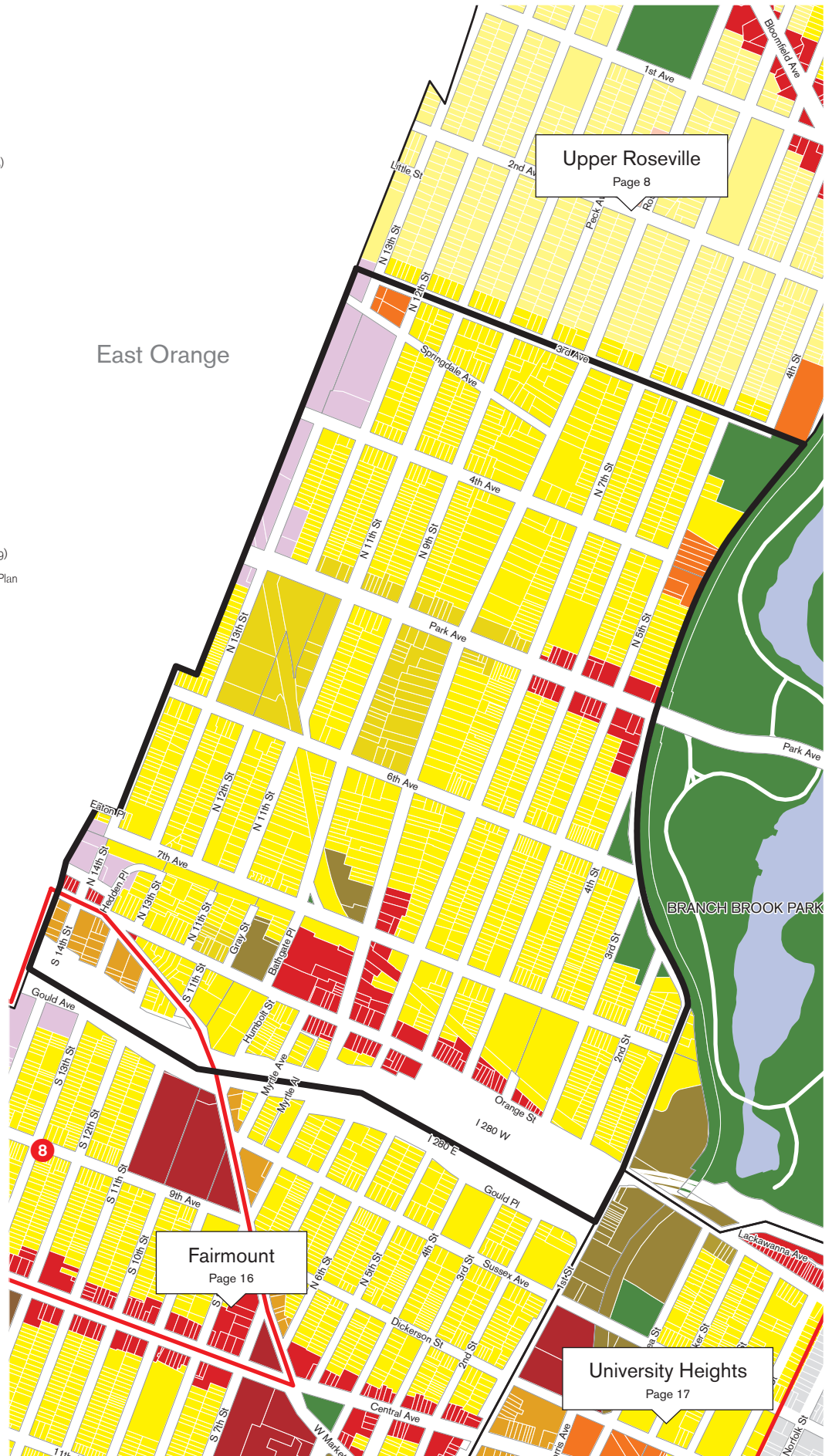
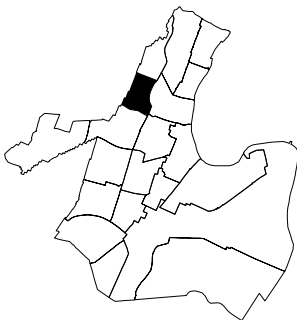
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Forest Hill

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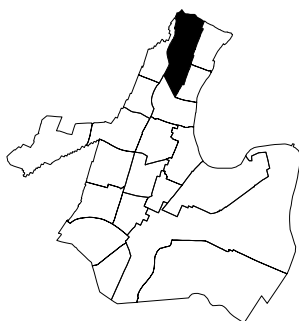
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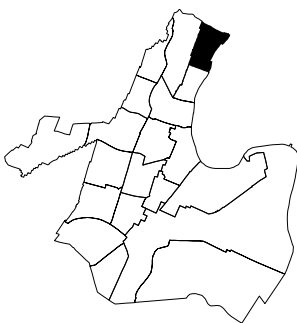
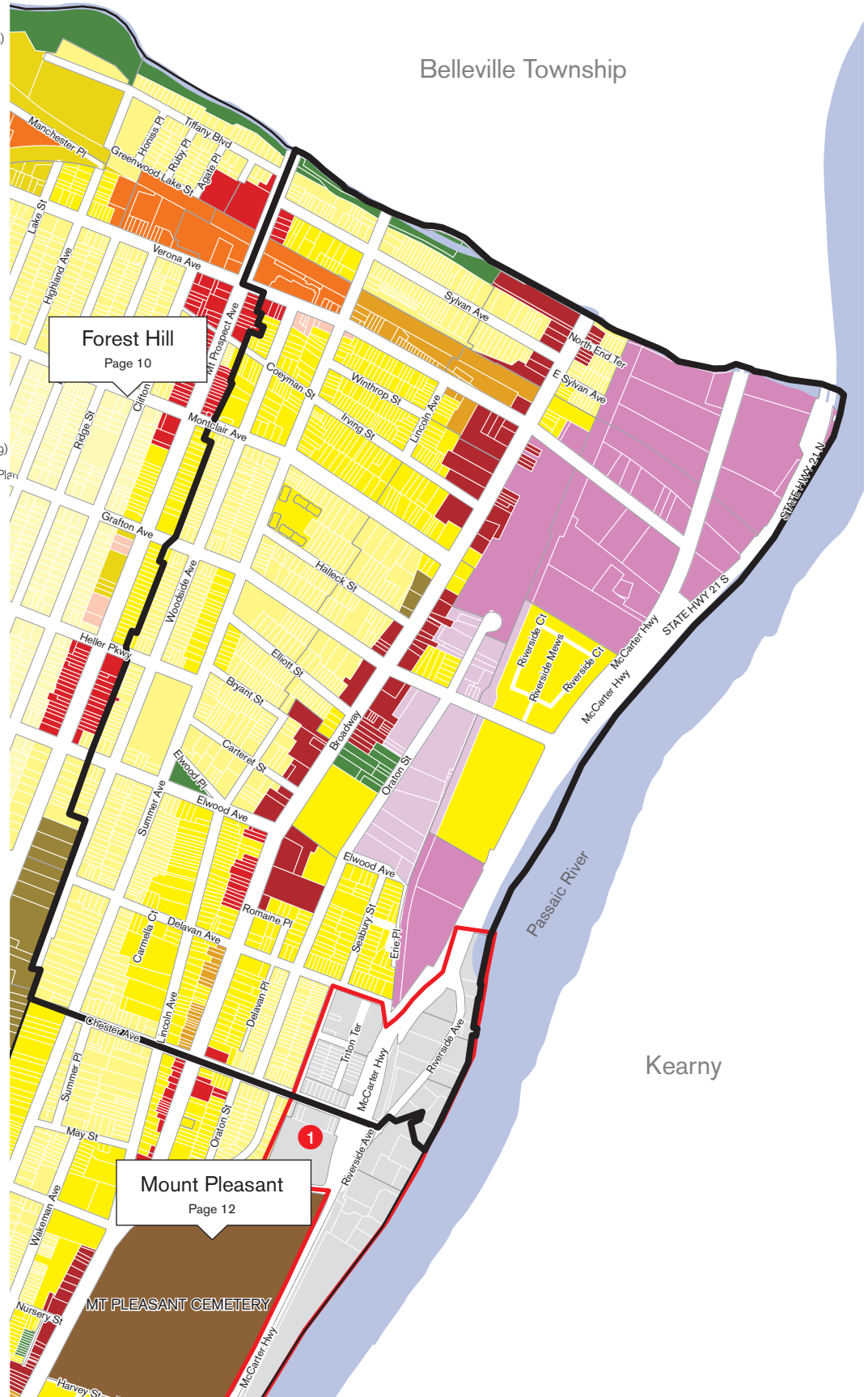
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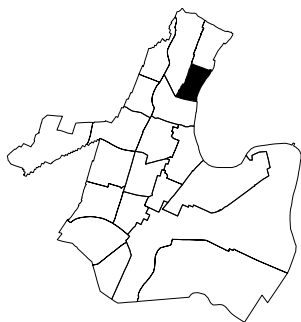
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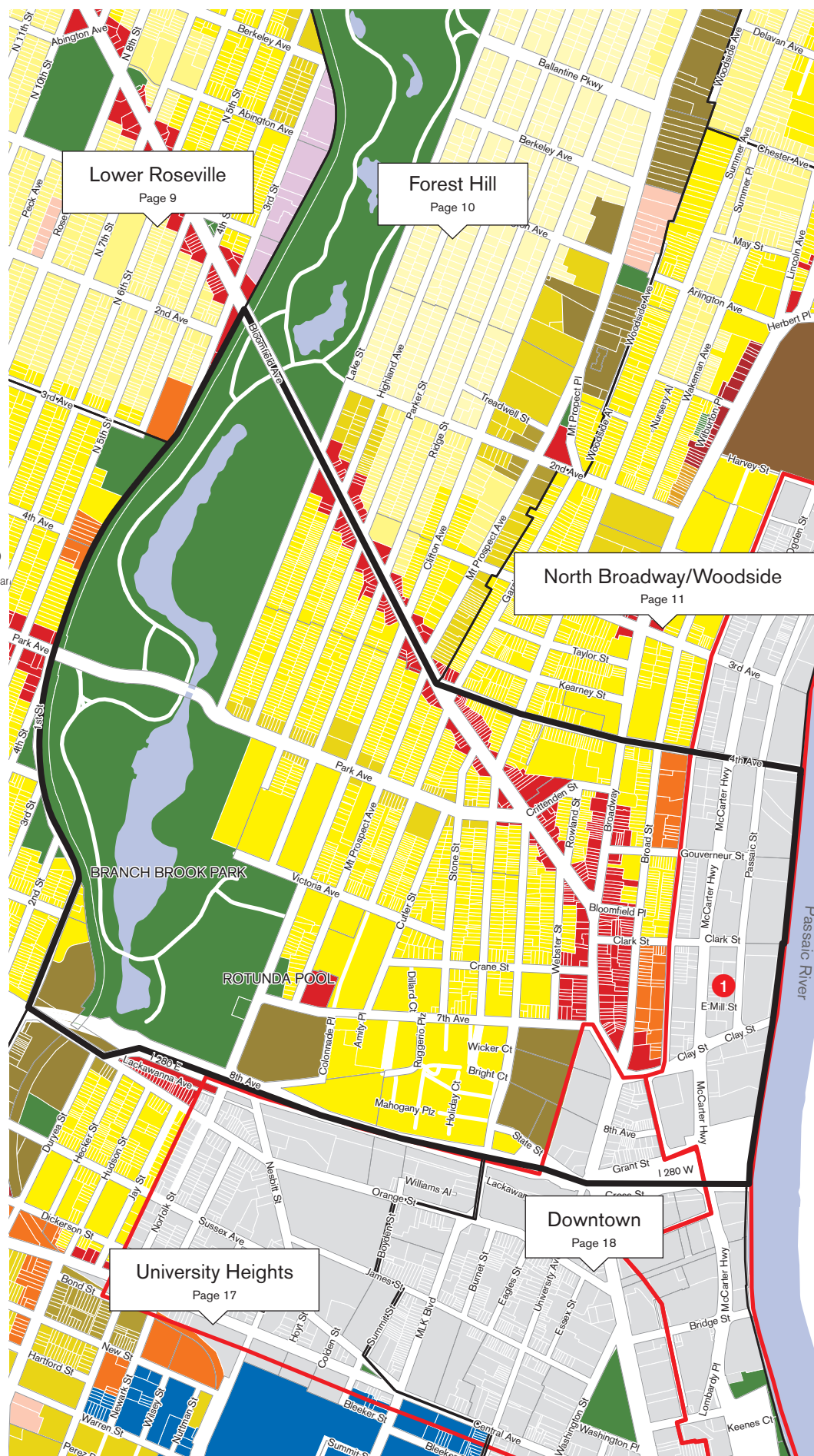


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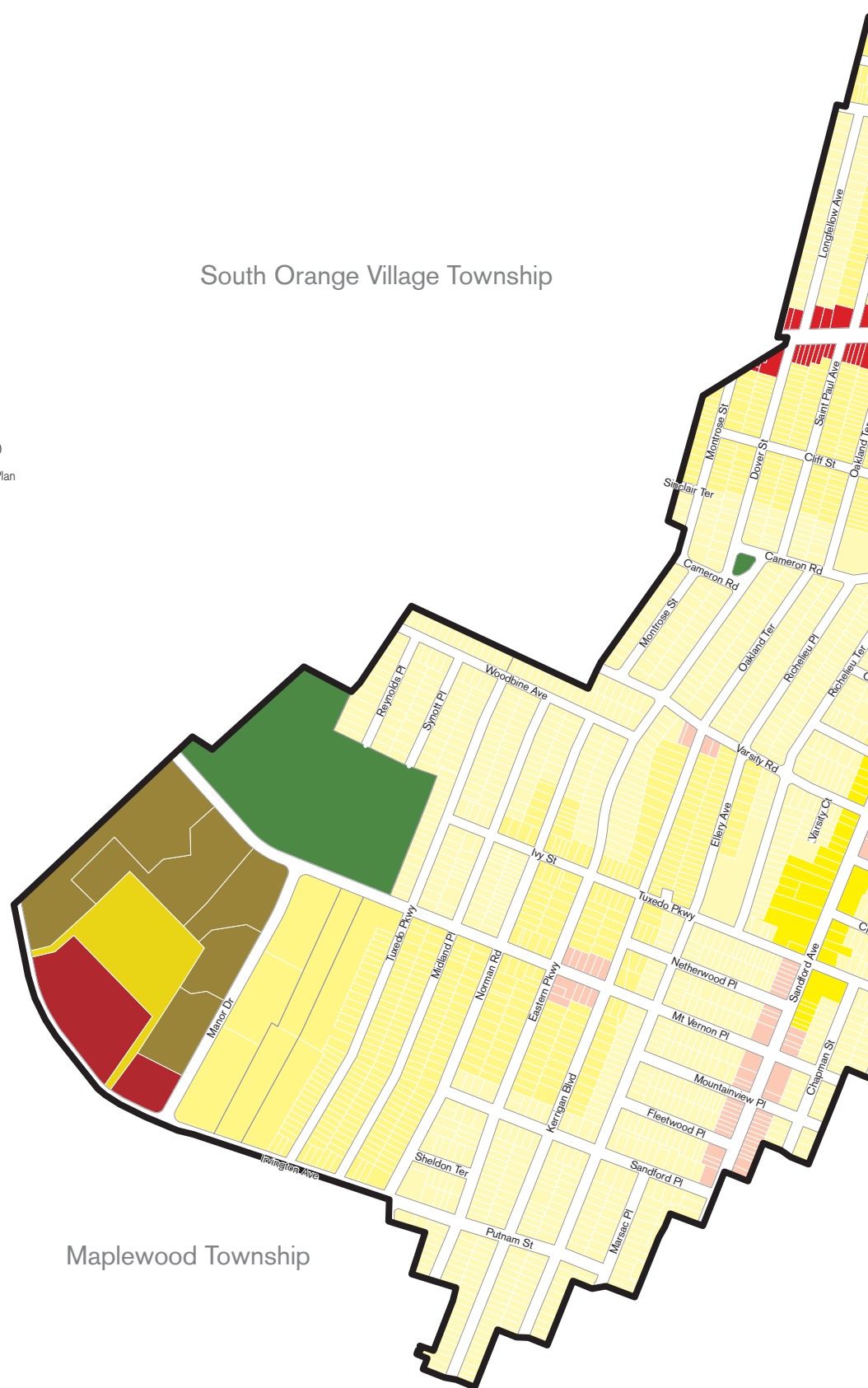
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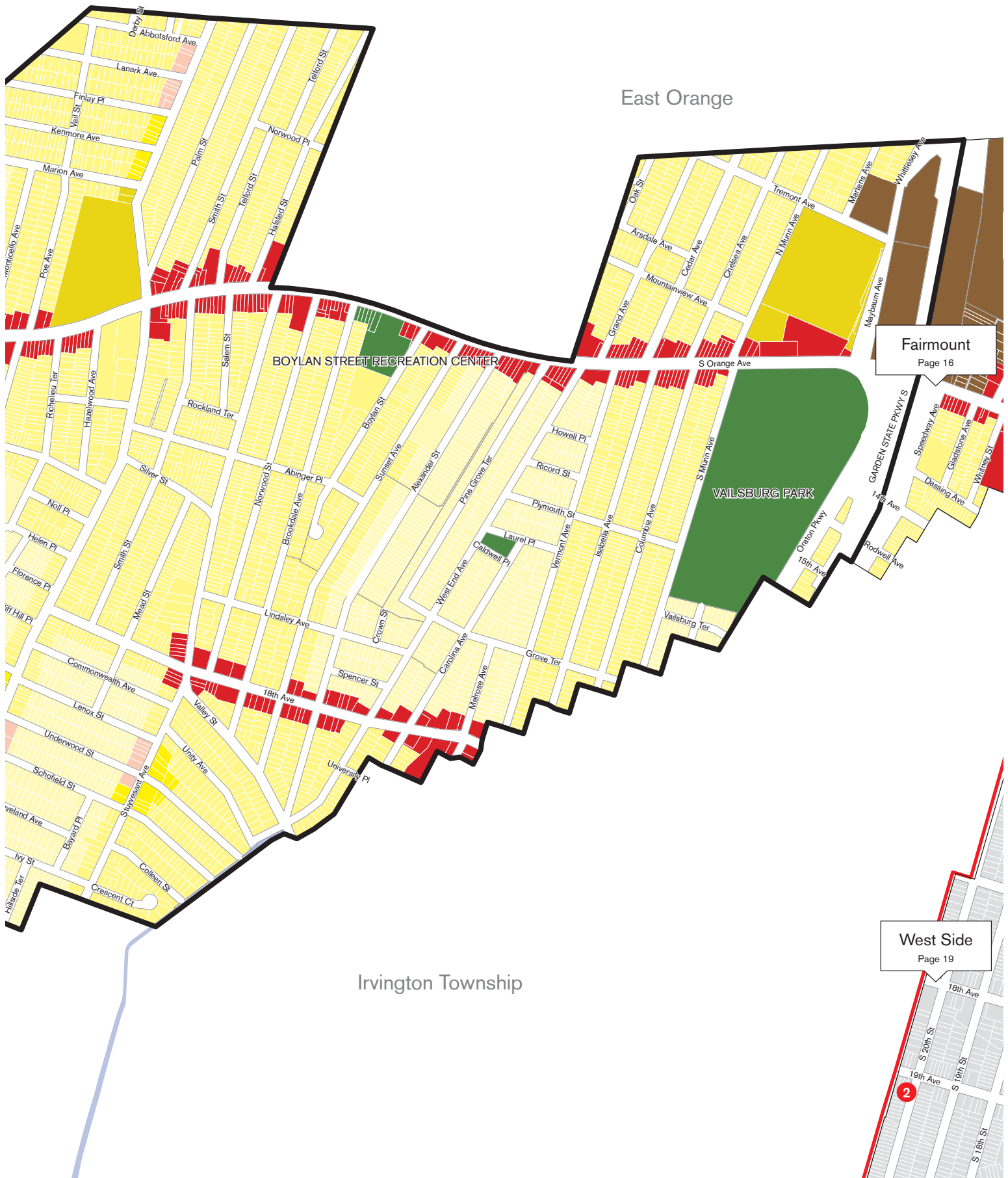
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South Orange Village Township



Maplewood Township



East Orange

BOYLAN STREET RECREATION CENTER

VAILSBURG PARK

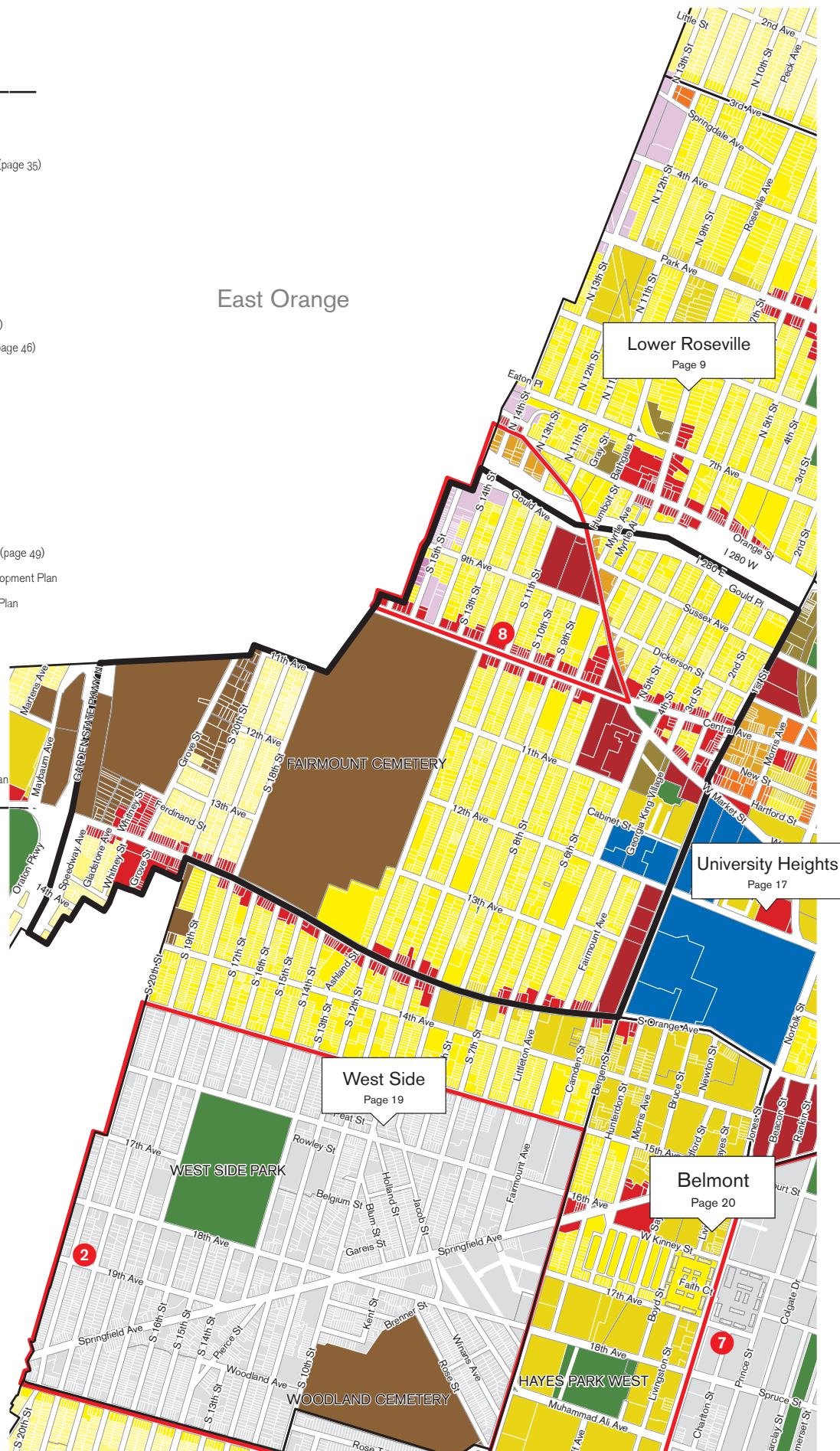
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Irvington Township

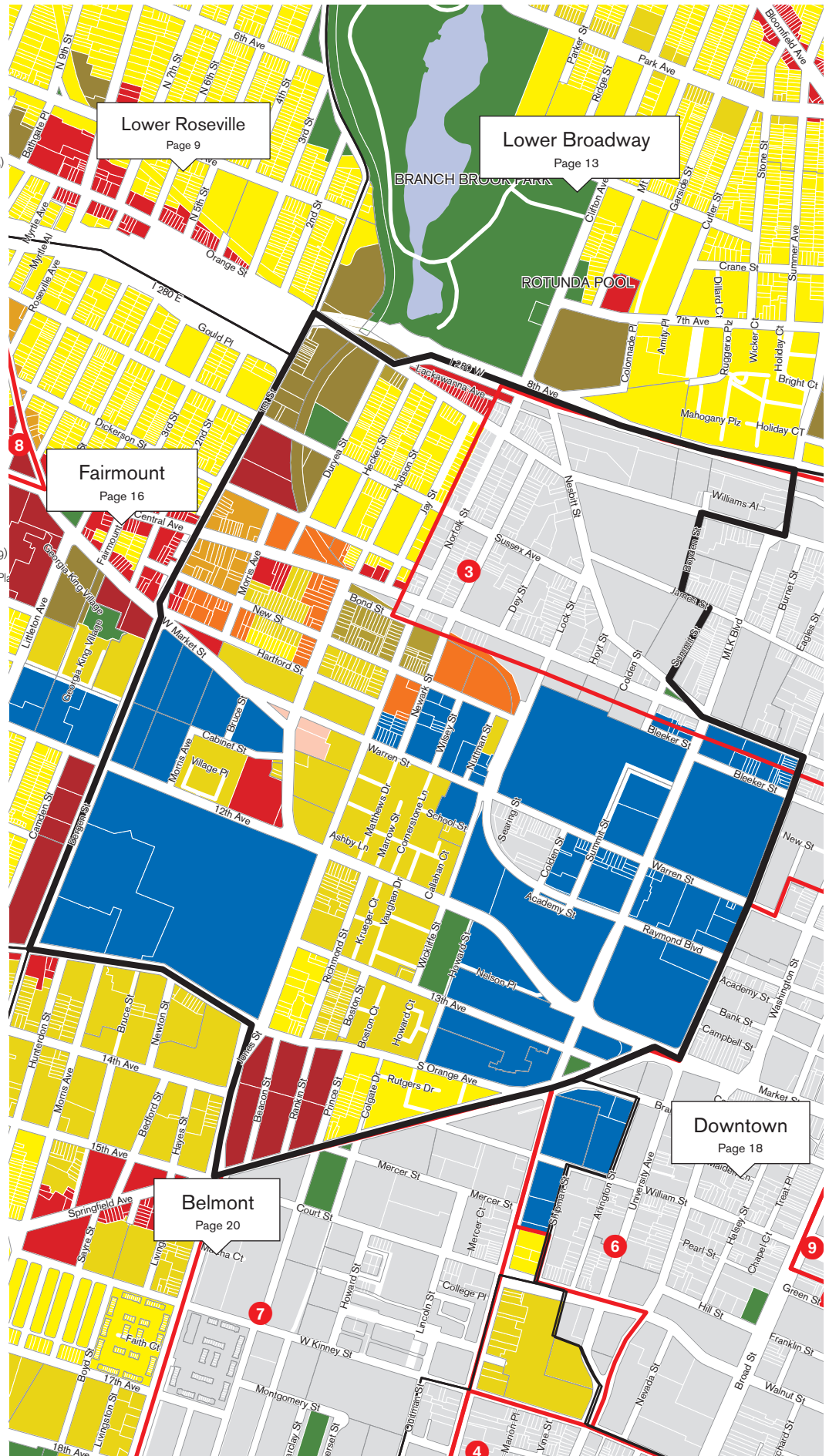
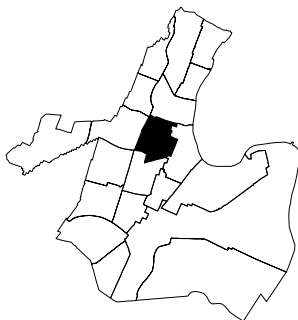
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University Heights

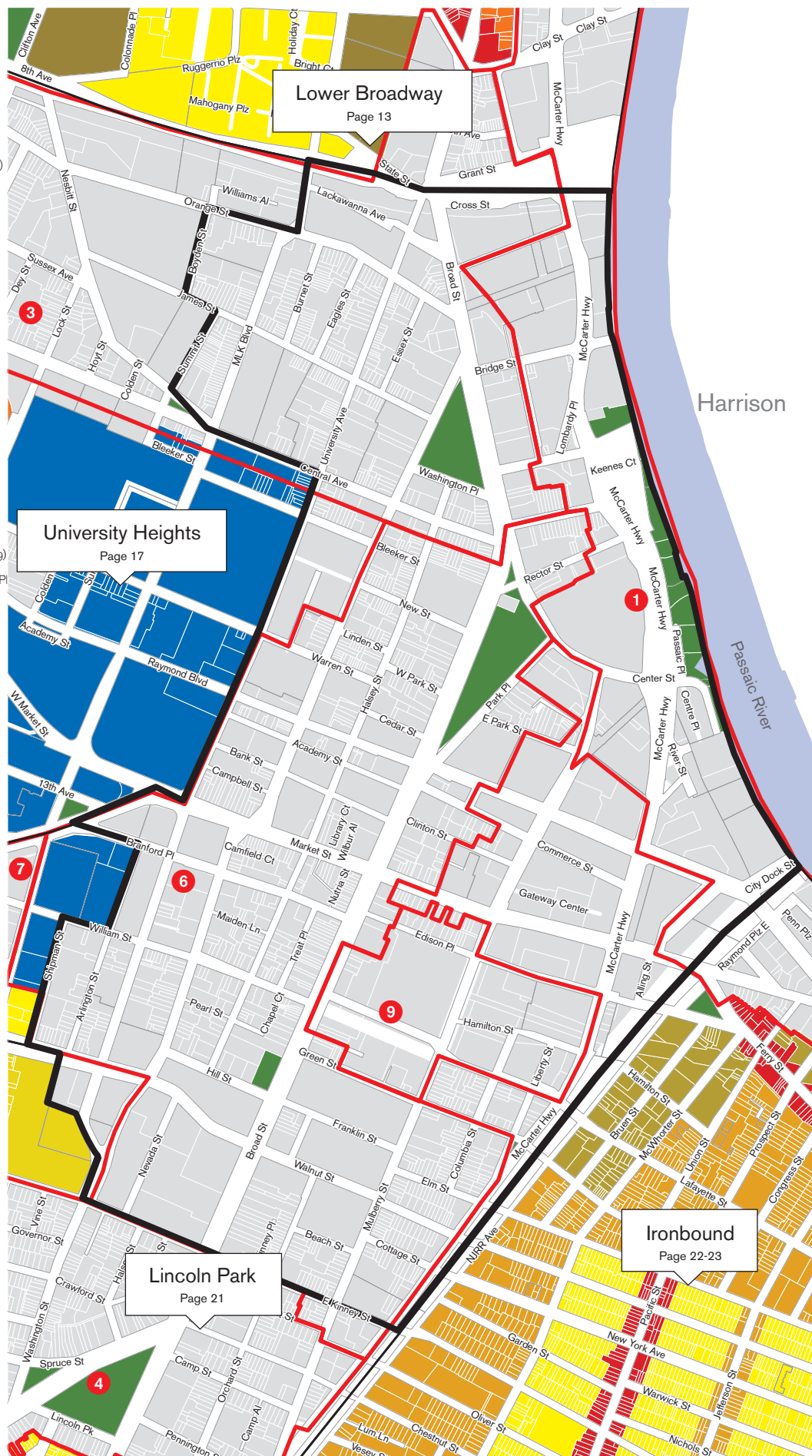
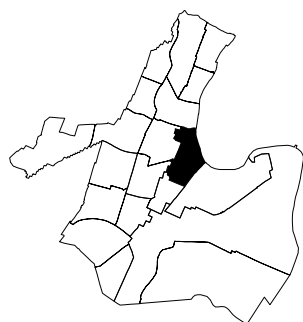
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Downtown

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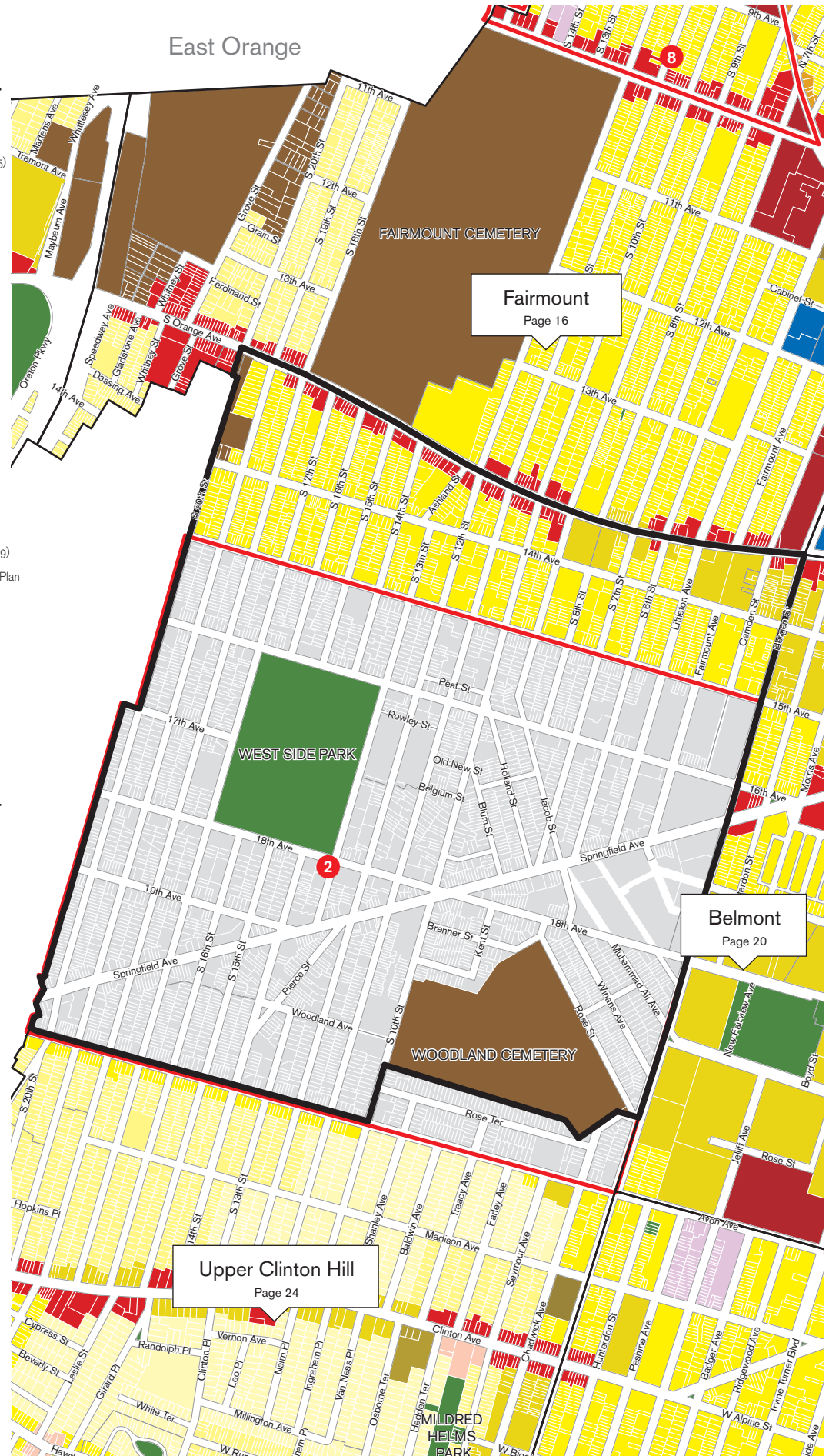
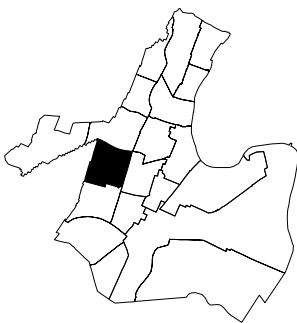
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West Side

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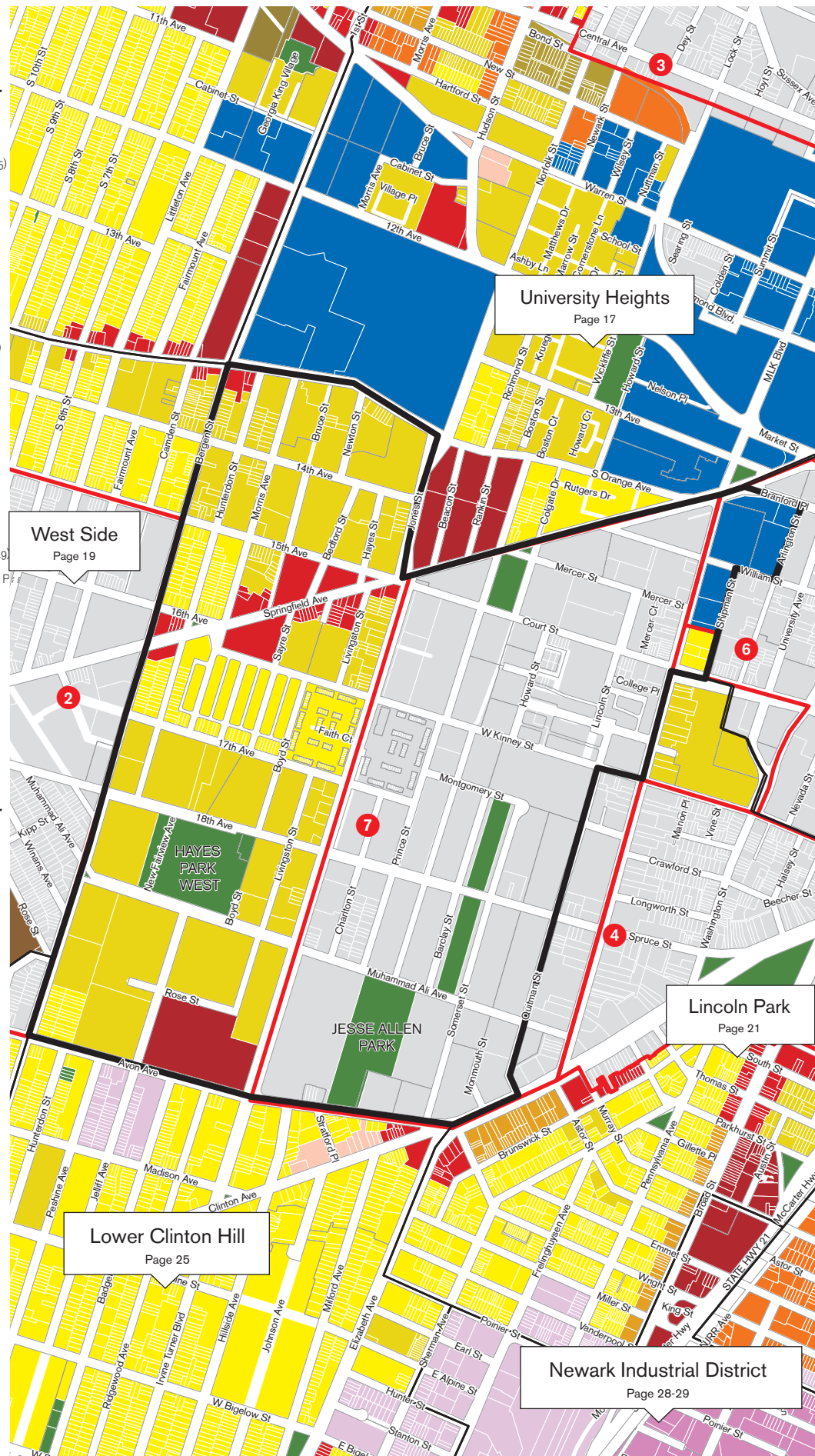
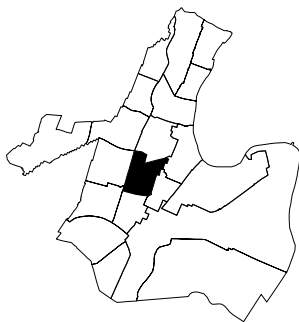
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Belmont

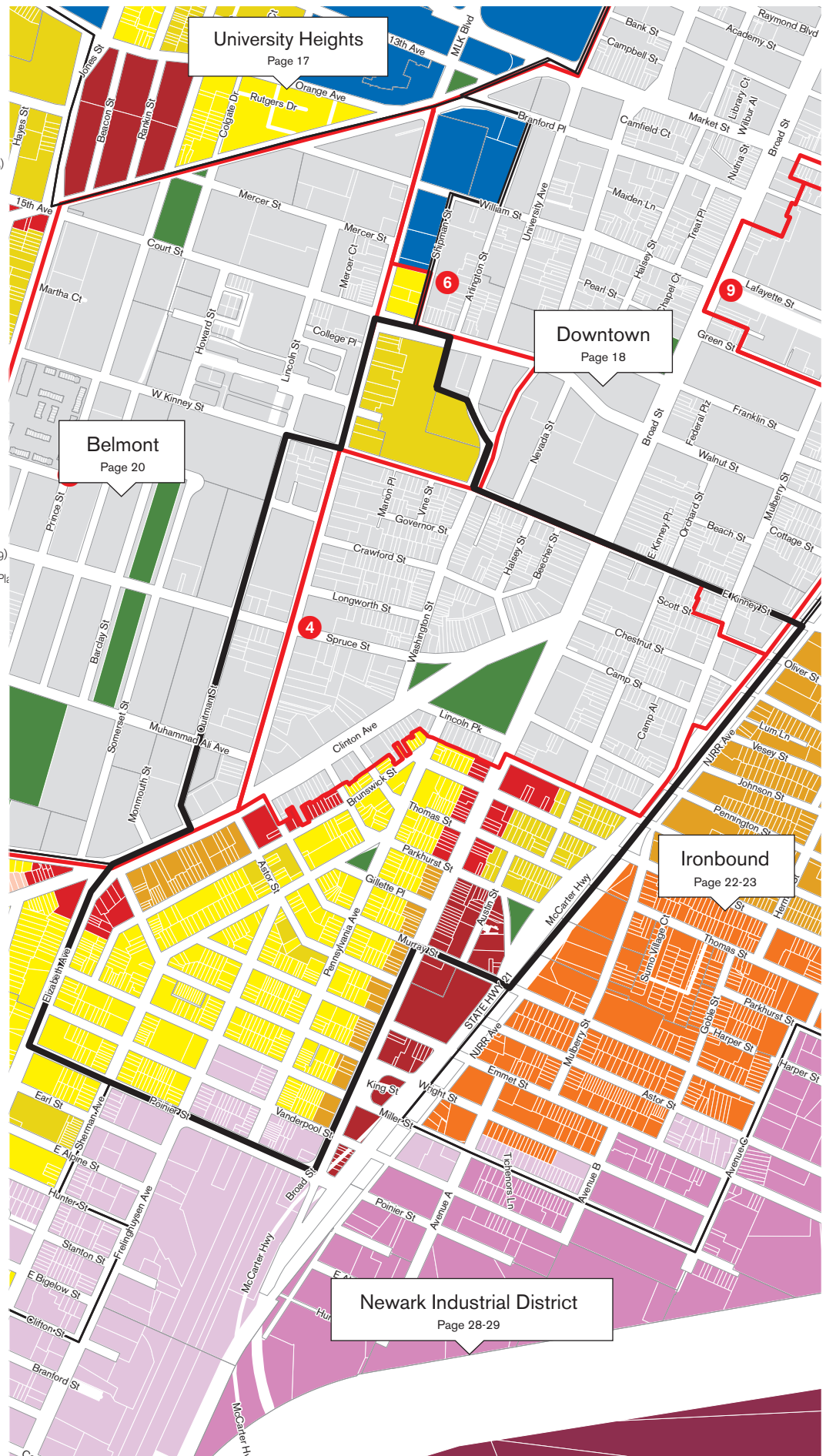
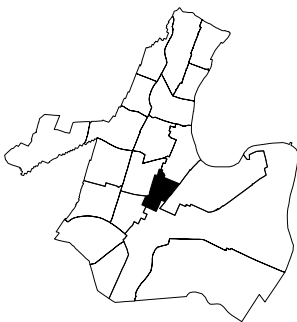
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Lincoln Park

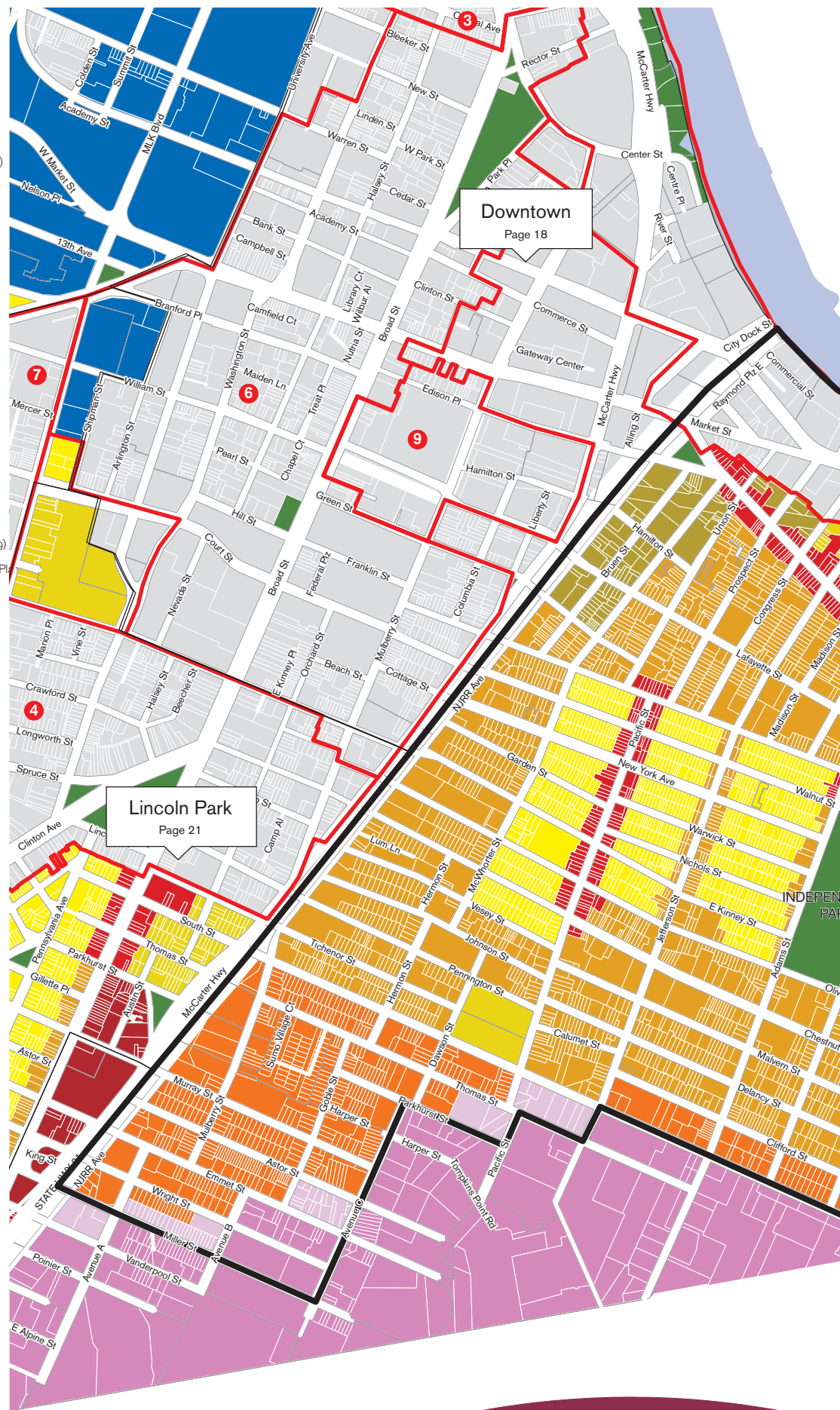
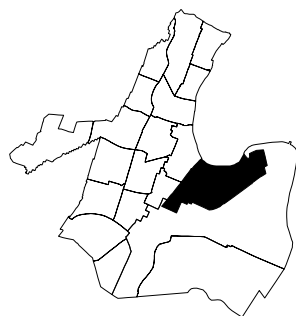
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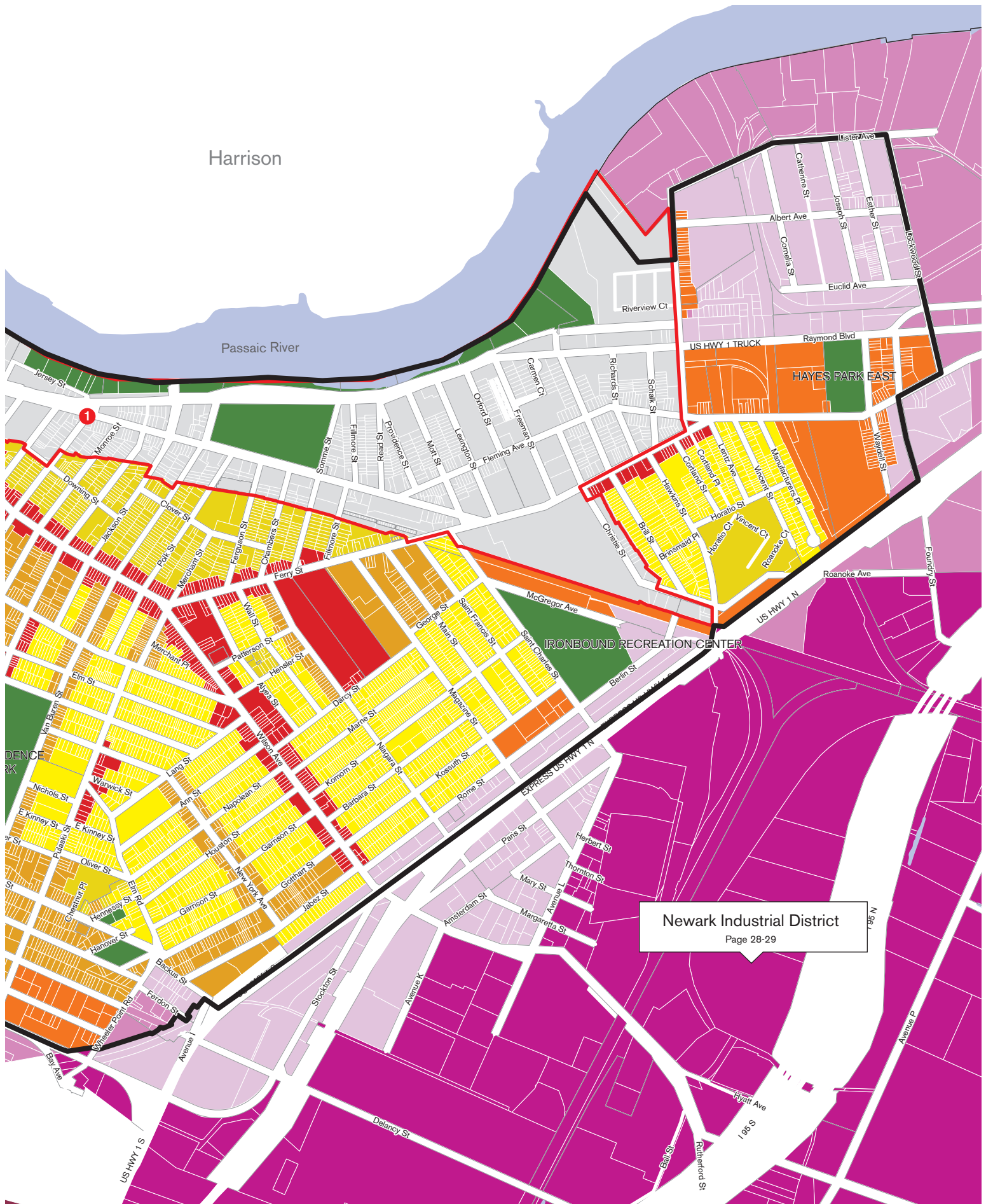


Ironbound

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Harrison

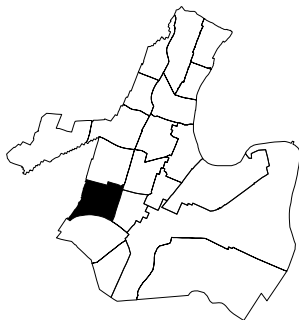
Passaic River

Newark Industrial District

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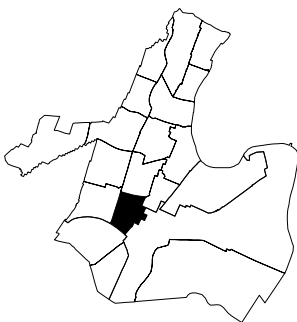
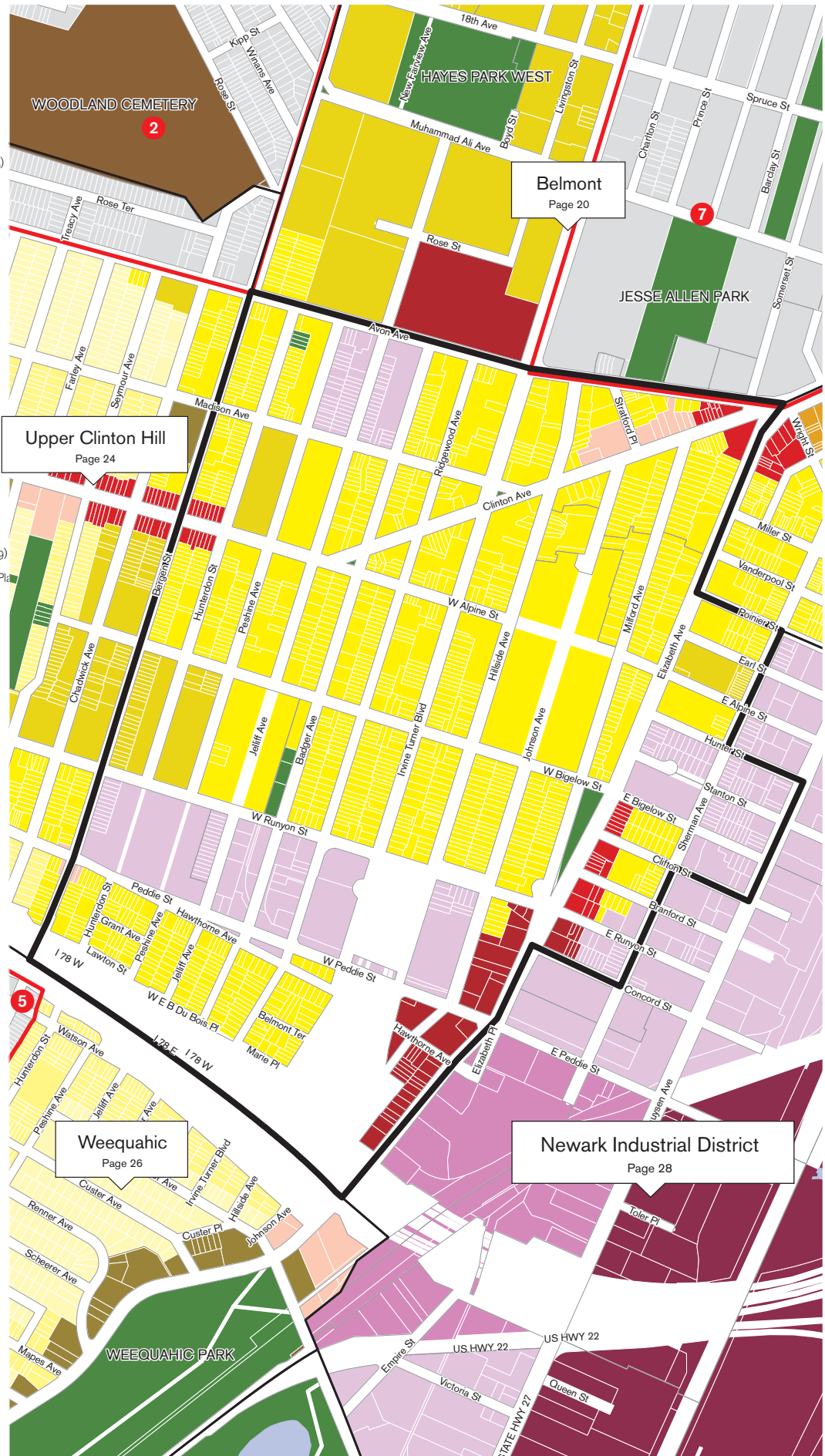
Upper Clinton Hill

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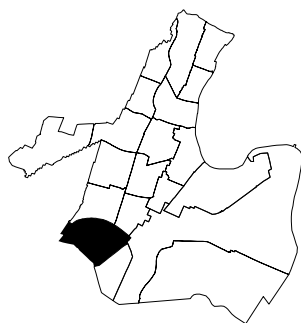
Lower Clinton Hill

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Weequahic

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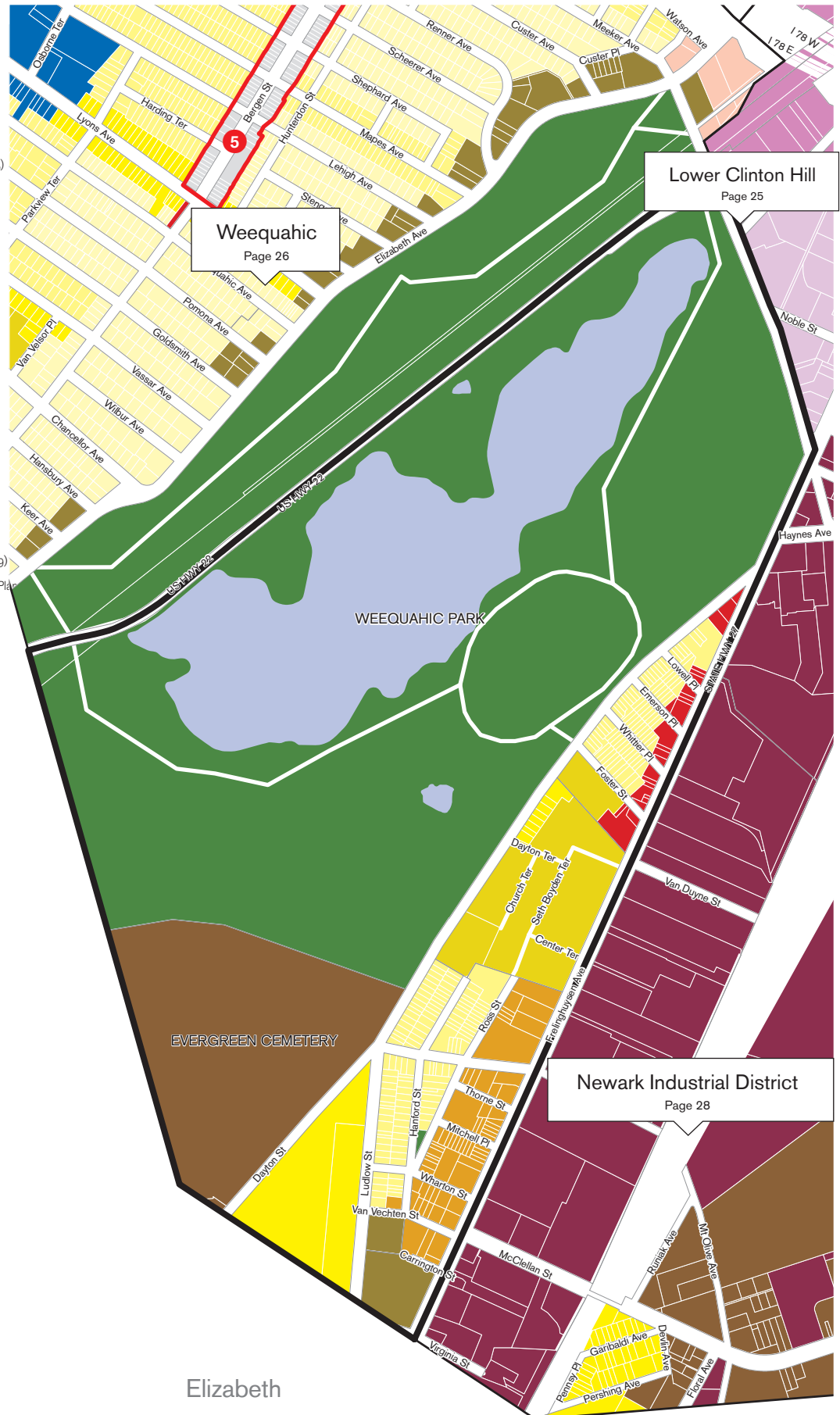
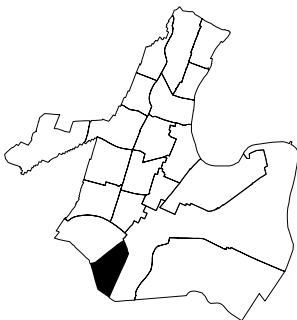
Hillside Township

Elizabeth

Dayton

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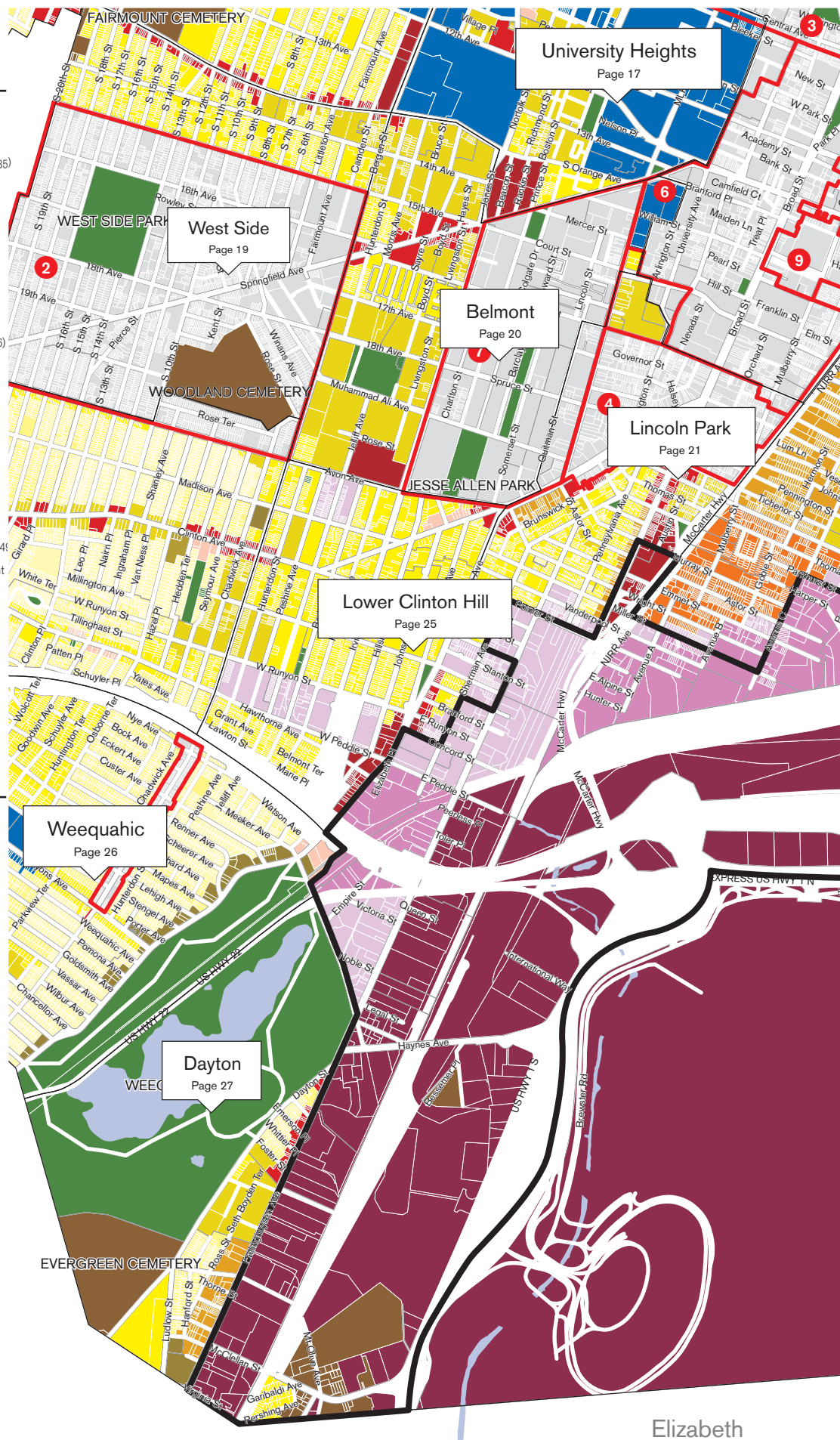
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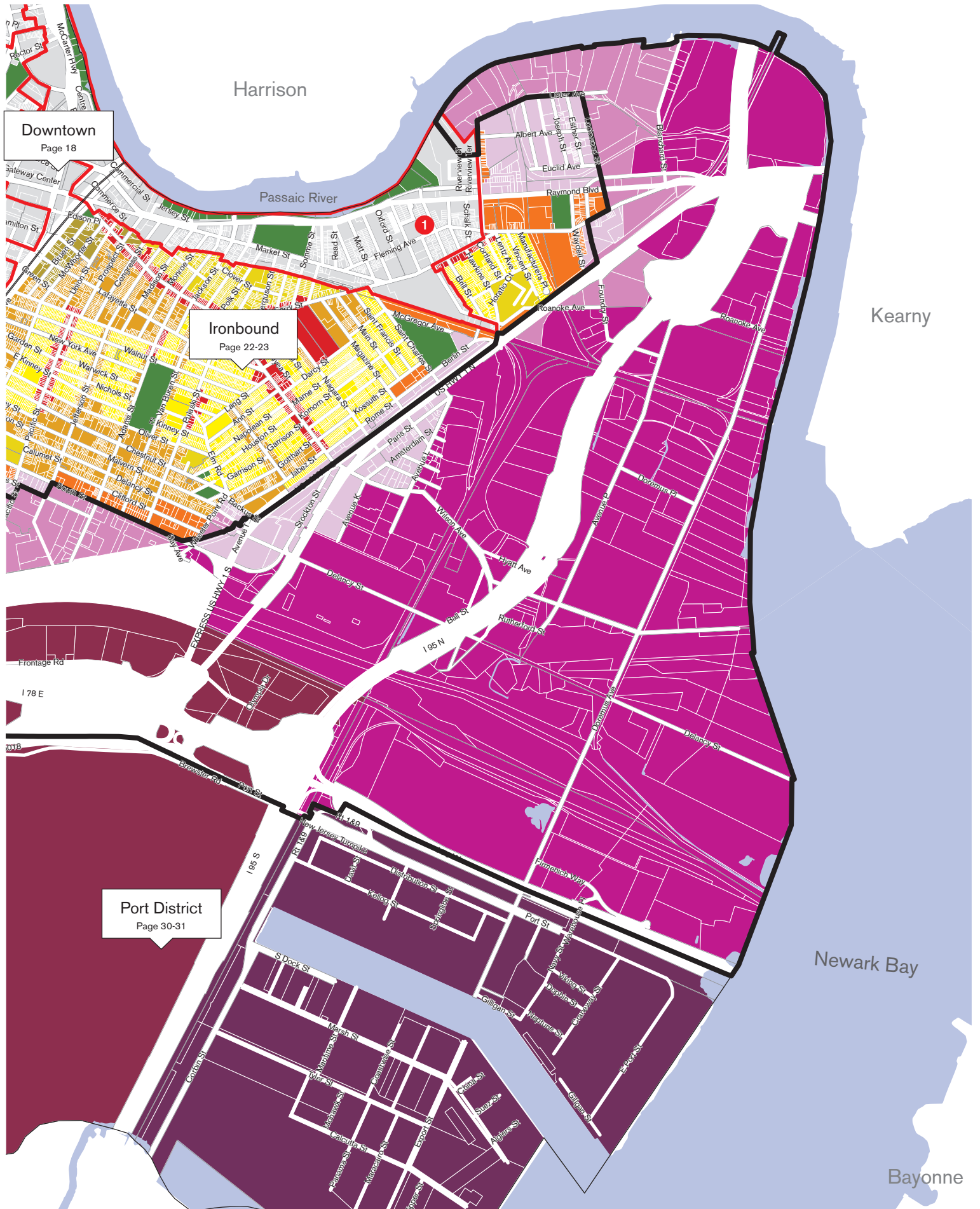
Newark Industrial District

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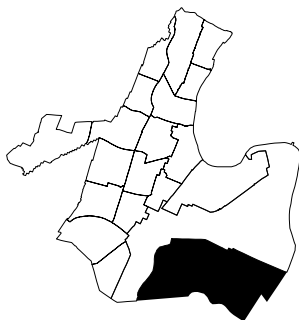
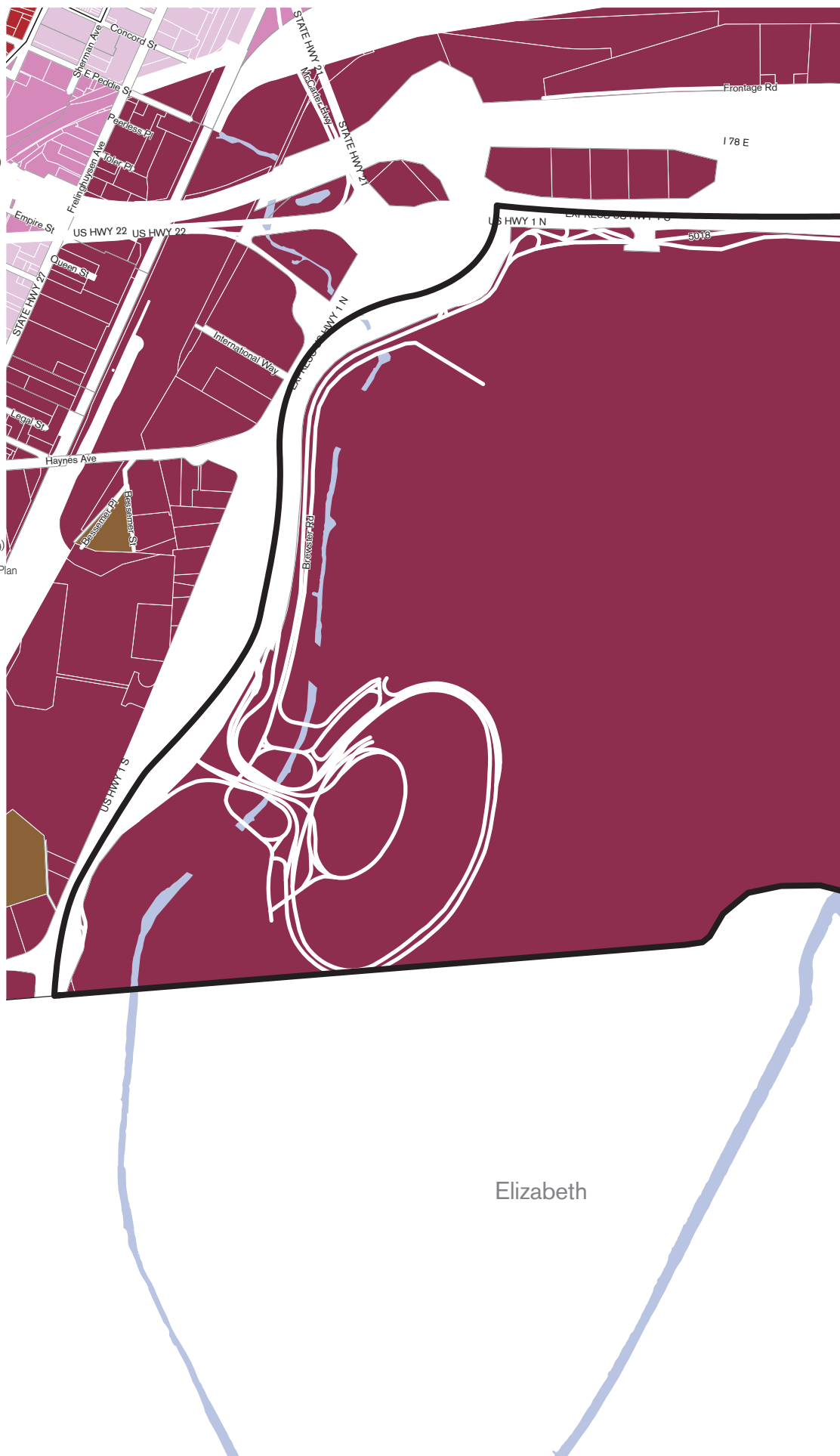


Elizabeth



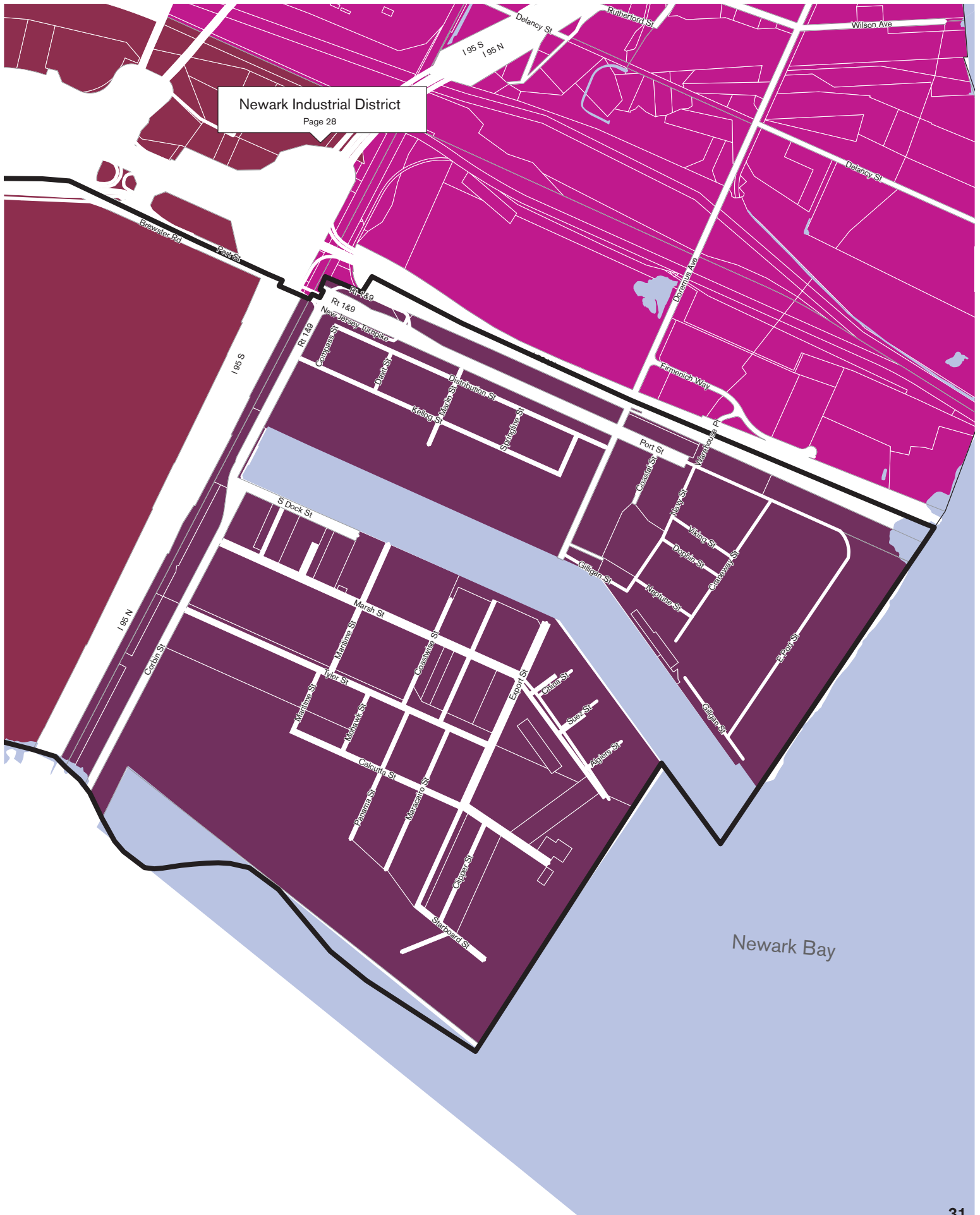
Port District

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Newark Industrial District

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Newark Bay

Introduction to Zones

On the preceding Newark Zoning Maps, every area of the city appears as a color that corresponds to one of the zones below. This introduction to the zones

provides a general overview of what land uses are permitted and prohibited in each zone, the rules for design, and maps of where within Newark the zone appears.

Residential 1 Family R-1		Regional Commercial C-3	
Residential 1-2 Family R-2		Light Industrial I-1	
Residential 1-3 Family & Town House R-3		Medium Industrial I-2	
Residential Low-Rise Multifamily R-4		Heavy Industrial I-3	
Residential Mid-Rise Multifamily R-5		Mixed Use 1 Residential & Commercial MX-1	
Residential High-Rise Multifamily R-6		Mixed-Use 2 Residential, Commercial, Industrial MX-2	
Neighborhood Commercial C-1		Port PORT	
Community Commercial C-2		Airport & Airport Support EWR & EWR-S	Redevelopment Zone/ Special District RDV/SD

Residential 1 Family R-1

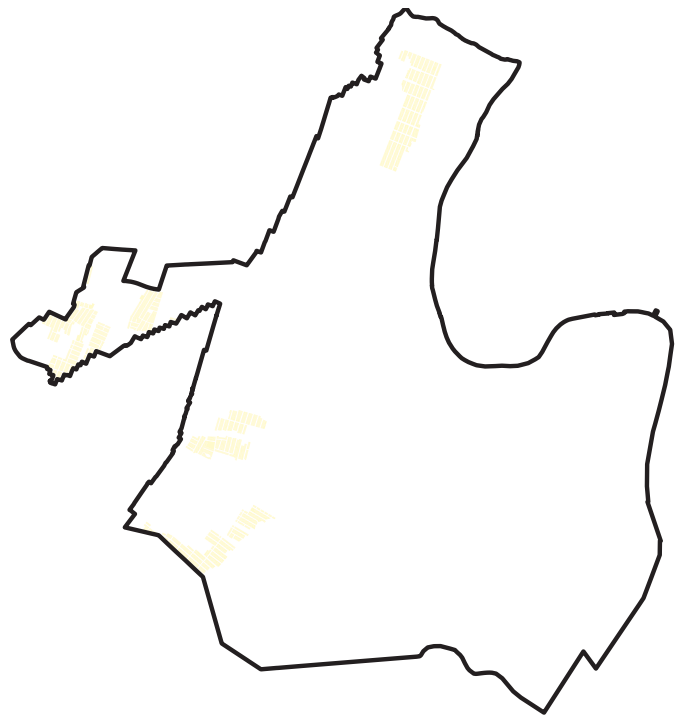


One-Family Residential (R-1) zoning allows for the lowest density, residential development in the city. In this zone, only single-family homes up to 3-stories high can be built. Other permitted uses include parks, community residences, garages, family day care, storage sheds and private swimming pools. To maintain the existing residential character of these places, uses such as assisted living and nursing home facilities, community centers and gardens, ground-floor retail, child care centers, offices, places of worship, and urban farms are not permitted. Schools are permitted only with conditions.

R-1 zoning is generally applied in areas of neighborhoods with existing larger, single-family homes such as Forest Hill, large sections of Vailsburg and portions of Weequahic and Upper Clinton Hill. These areas are generally characterized by detached homes on larger yards and feel more suburban than the denser residential areas of most of Newark.

Learn more about the specific [uses](#) that are permitted and prohibited in R-1 zones beginning on 82.

Learn more about the [size and design of buildings](#) permitted in R-1 zones beginning on page 98.



Residential 1-2 Family R-2

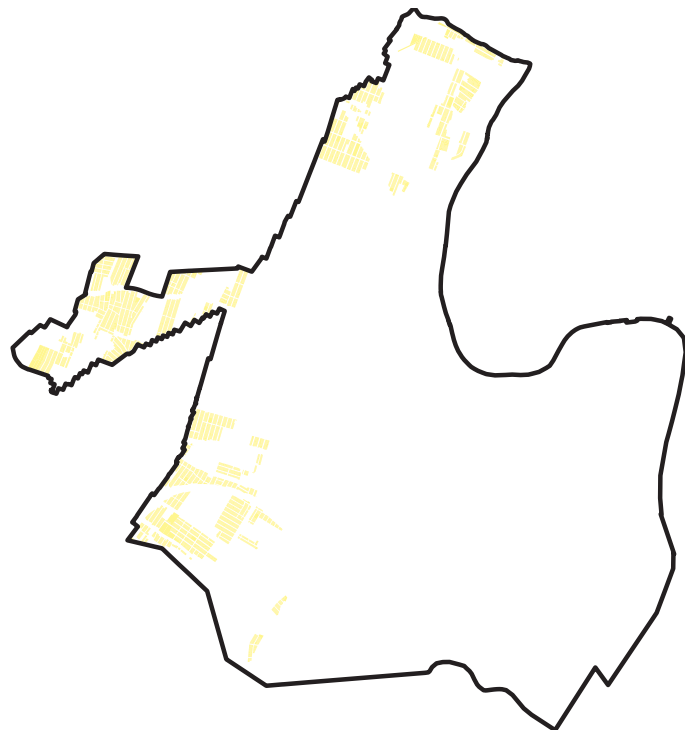


One-to-Two Family Residential (R-2) zoning allows for slightly denser residential development than in One-Family Residential (R-1) zoning, permitting single- and two-family homes up to three stories high. Other permitted uses include parks, community residences, garages, day care, storage sheds, private swimming pools, and home gardening. Areas zoned R-2 encourage strong residential character and do not permit such uses as assisted living and nursing home facilities, community centers, ground floor retail, office and service, and urban farms. Child care centers, places of worship, and schools are permitted only with conditions.

R-2 zoning is generally applied in areas of neighborhoods with a mix of single- and two-family homes such as those found in Upper Roseville, much of Upper Clinton Hill and sections of Vailsburg, Weequahic, Forest Hill, North Broadway/Woodside and Mount Pleasant. These areas are generally characterized by both detached and semi-detached, duplex homes that sit on smaller yards, giving them a more suburban feel.

Learn more about the specific uses that are permitted and prohibited in R-2 zones beginning on page 82.

Learn more about the size and design of buildings permitted in R-2 zones beginning on page 98.



Residential 1–3 Family & Town House

R-3

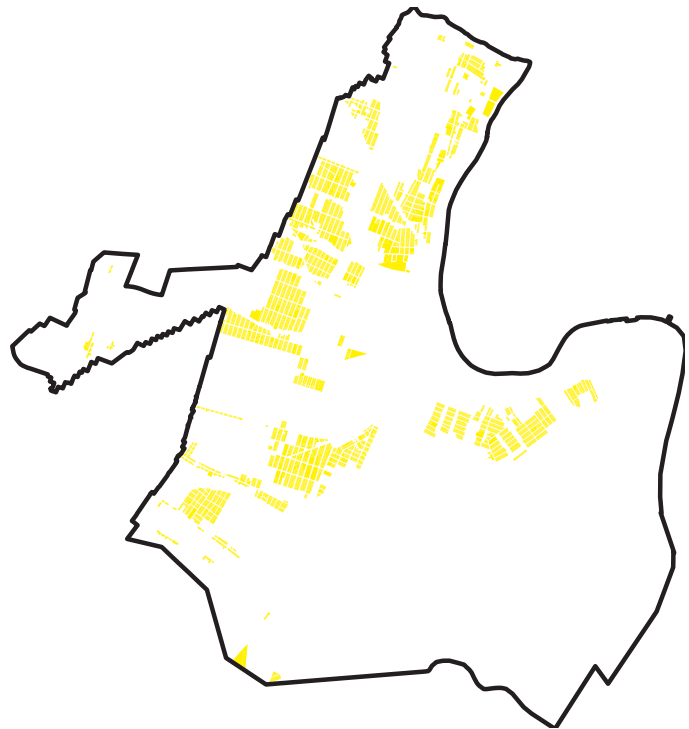


One- to Three-Family and Town House Residential (R-3) zoning allows for denser, residential development than in One- and Two-Family Residential (R-2) zoning, permitting single-, two- and three-family homes, as well as townhomes, up to three stories high. Other permitted uses include parks, community residences, garages, and day care. Areas zoned R-3 encourage strong residential character and do not permit such uses as assisted living and nursing home facilities, ground floor retail, office and service. Child care centers, community centers, places of worship, and schools are permitted only with conditions.

R-3 zoning is generally applied in areas of neighborhoods with a mix of single-, two- and three-family homes, as well as townhomes, such as those found in Lower Roseville, Lower Broadway, Fairmount and Lower Clinton Hill, as well as sections of North Broadway/Woodside, Mount Pleasant, the Ironbound, and a small section of Weequahic. These areas are generally characterized by bulkier detached homes and rows of townhomes on smaller yards, giving them a semi-urban feel.

Learn more about the specific [uses](#) that are permitted and prohibited in R-3 zones beginning on page 82.

Learn more about the [size and design of buildings](#) permitted in R-3 zones beginning on page 98.



Residential Low-Rise Multifamily R-4

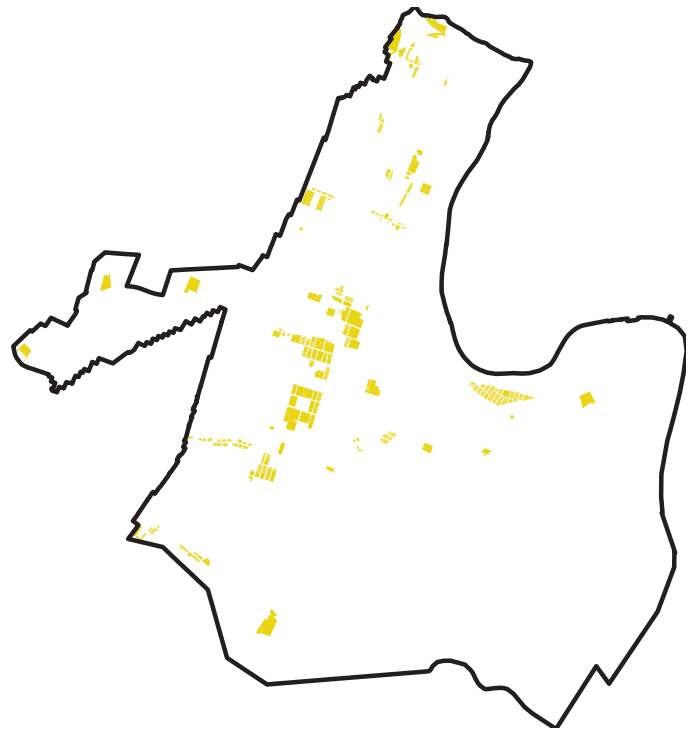


Low-rise Multifamily Residential (R-4) zoning allows for denser, residential development than in One-to-Three-Family and Town House Residential (R-3) zoning, permitting single-, two- and three-family homes and townhomes up to three stories high as well as low-rise multi-family housing up to four stories high. Other permitted uses include parks, community residences, garages, ground floor retail, office or services, and day care. Areas zoned R-4 encourage residential character and do not permit some forms of commercial uses. Neighborhood services such as assisted living facilities, nursing homes, child care centers, community centers, places of worship, and schools are permitted only with conditions.

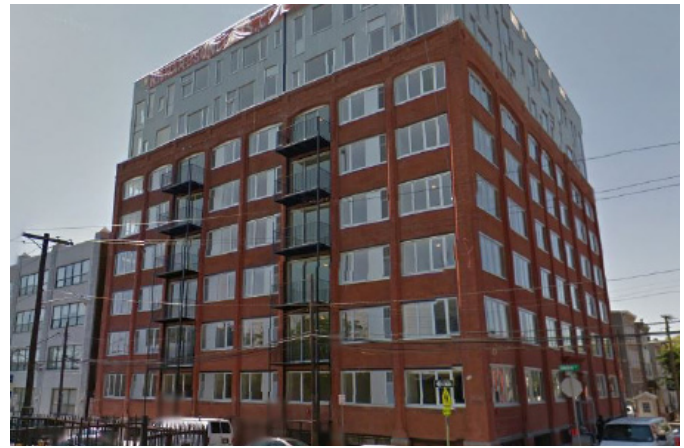
R-4 zoning is generally applied in areas of neighborhoods with a mix of single-, two-, three-family homes and townhomes, but with a predominance of low-rise, multi-family homes, such as those found in large sections of Belmont, the residential sections of University Heights and portions of most Newark neighborhoods, including Upper and Lower Clinton Hill and the Ironbound. These areas are generally characterized by more densely packed homes and multifamily buildings that are four stories or less on very little yard space, giving them a more urban, residential feel.

Learn more about the specific uses that are permitted and prohibited in R-4 zones beginning on page 82.

Learn more about the size and design of buildings permitted in R-4 zones beginning on page 98.



Residential Mid-Rise Multifamily R-5

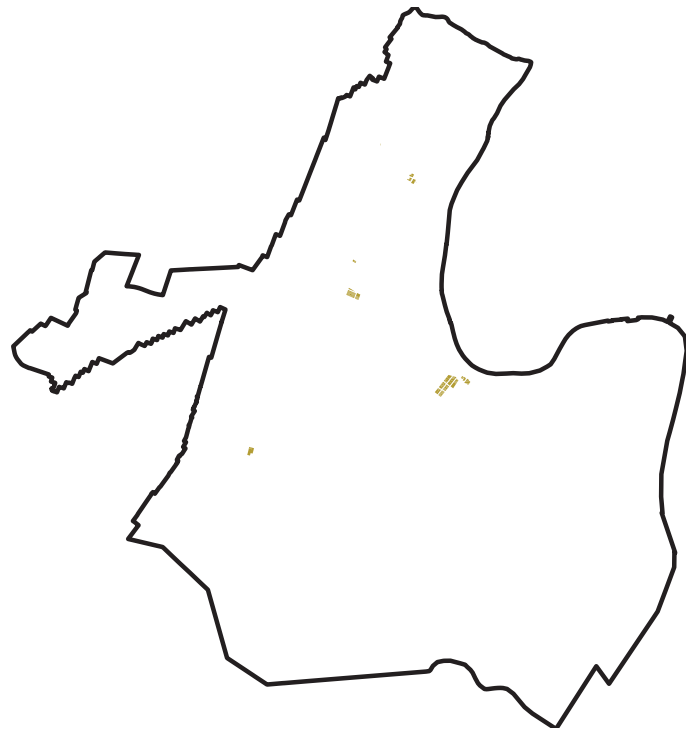


Mid-Rise Multifamily Residential (R-5) zoning allows for dense, residential development, permitting low- and mid-rise multi-family housing up to eight stories high. Other permitted uses include parks, community residences, garages, ground floor retail, offices or services, and day care. Areas zoned R-5 encourage residential character and do not permit some types of commercial or retail uses. Neighborhood services such as assisted living facilities, nursing homes, child care centers, community centers, places of worship, and primary and secondary schools are permitted only with conditions, as are urban farms, home professional offices, portable storage units, private sports courts and solar and wind energy systems.

R-5 zoning is generally applied in areas of neighborhoods with a mix of both low- and mid-rise, multi-family buildings, such as those found in pockets of many Newark neighborhoods including Upper and Lower Roseville and the Ironbound. These areas are generally characterized by dense complexes of residential buildings up to eight stories in height on small, shared grounds, giving them a strong urban, residential feel.

Learn more about the specific uses that are permitted and prohibited in R-5 zones beginning on page 82.

Learn more about the size and design of buildings permitted in R-5 zones beginning on page 98.



Residential High-Rise Multifamily R-6



High-Rise Multifamily Residential (R-6) zoning allows for dense, residential development, permitting low-, mid- and high-rise multi-family housing up to 10 stories high in general, or up to 20 stories with greater lot square footage. Other permitted uses include parks, community residences, garages, ground floor retail, office or services, and day care. Areas zoned R-6 encourage residential character and do not permit some types of commercial or retail uses. Uses such as assisted living facilities, nursing homes, child care centers, commercial antennas & microwave dishes, community centers, places of worship and primary and secondary schools are permitted only with conditions, as are urban farms, home professional offices, portable storage units, private sports courts and solar and wind energy systems.

R-6 zoning is generally applied in areas of neighborhoods with a mix of low-, mid-, and high-rise multifamily buildings, such as those found in portions of numerous Newark neighborhoods, including Forest Hill, Lower Broadway, University Heights, Vailsburg, and Weequahic. These areas are generally characterized by dense complexes of residential buildings up to ten stories in height on small, shared grounds, giving them a very strong urban, residential feel.

Learn more about the specific uses that are permitted and prohibited in R-6 zones beginning on page 82.

Learn more about the size and design of buildings permitted in R-6 zones beginning on page 98.



Neighborhood Commercial

C-1

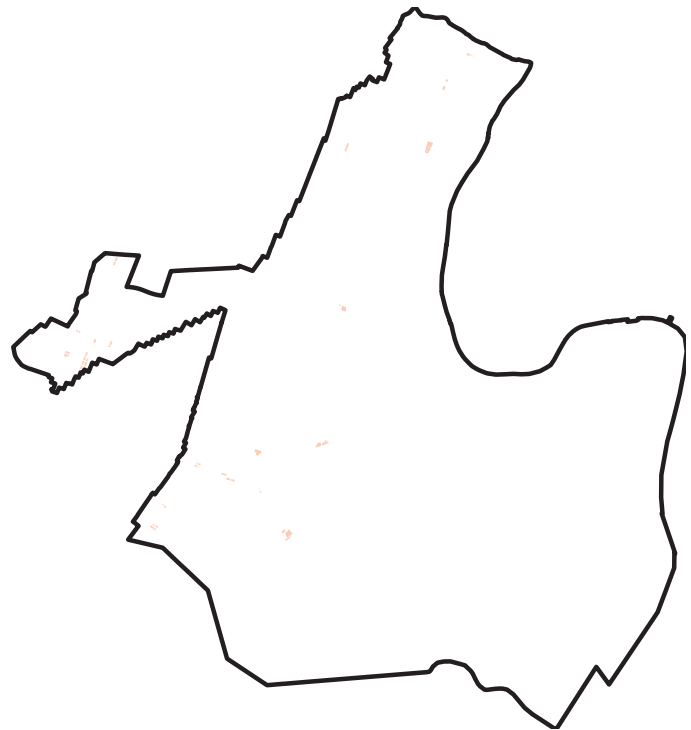


Neighborhood Commercial (C-1) zoning allows for small-scale, commercial development that is residential in character and caters to local, everyday retail needs of nearby residents. Permitted development in C-1 zones includes ground-floor commercial with commercial or residential above in buildings up to four stories high. To preserve neighborhood character, some types of commercial or retail are not permitted.

C-1 zoning is generally applied in small neighborhood-serving commercial areas of moderate-density, residential neighborhoods, including Upper Roseville, Forest Hill, North Broadway/Woodside, Vailsburg, University Heights, Upper Clinton Hill, Lower Clinton Hill, and Weequahic. These areas are generally characterized by low- to mid-rise multi-family buildings giving them an urban, residential feel.

Learn more about the specific [uses](#) that are permitted and prohibited in C-1 zones beginning on page 84.

Learn more about the [size and design of buildings](#) permitted in C-1 zones beginning on page 98.



Community Commercial C-2

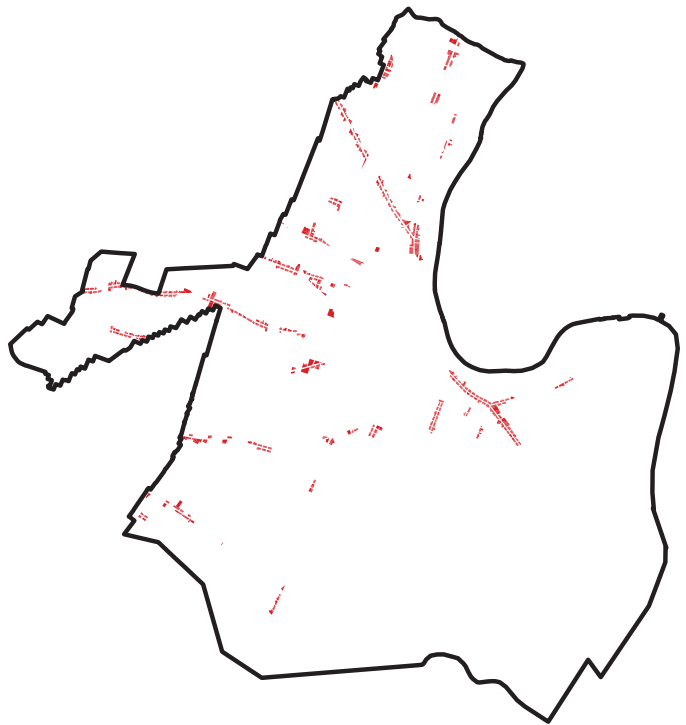


Community Commercial (C-2) zoning allows for slightly more moderate-scale and dense commercial development than in Neighborhood Commercial (C-1) zoning for ground-floor commercial with commercial or residential above in buildings up to five stories high. New development must be at least three stories high. C-2 zones are typically the heart of a neighborhood's central commercial district. There are more permitted uses in C-2 zones than in C-1.

C-2 zoning is generally applied in existing community commercial centers, such as Bloomfield Avenue as it passes through Upper Roseville, Forest Hill and Lower Broadway; Orange Street in Lower Roseville; Central Avenue in Fairmount; South Orange Avenue as it passes through Vailsburg, Fairmount, and West Side; Ferry Street in the Ironbound; and number of smaller sections of nearly all of Newark's neighborhoods. Surrounded by a mix of low- mid-rise residential buildings and often along vibrant streets, these areas are typically a community's center of vibrancy.

Learn more about the specific uses that are permitted and prohibited in C-2 zones beginning on page 84.

Learn more about the size and design of buildings permitted in C-2 zones beginning on page 98.



Regional Commercial C-3

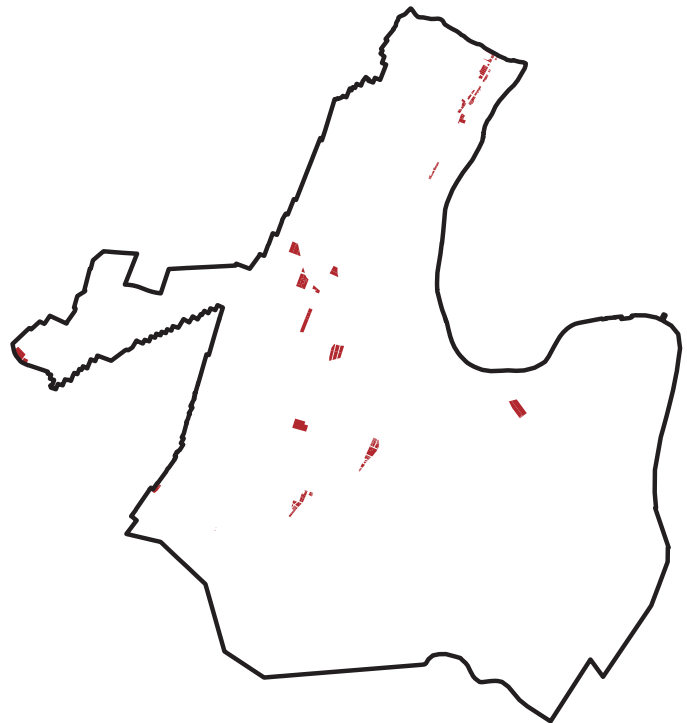


Regional Commercial (C-3) zoning allows for larger-scale commercial development with a greater variety of uses than that of Neighborhood Commercial (C-1) or Community Commercial (C-2) and is intended to serve more than the neighborhood or community in which it is found. C-3 zoning allows for ground-floor commercial with commercial or residential above in buildings up to eight stories high as well as large, detached commercial buildings up to eight stories high.

C-3 zoning is generally applied on the edges of neighborhoods, outside of residential areas and along primary transportation corridors, such as sections of Broadway as it passes through North Broadway/Woodside and Mount Pleasant; along Irvington Avenue on the southwestern edge of Vailsburg; in Fairmount along portions of West Market Street and Bergen Street; Springfield Avenue as it passes through University Heights and Belmont; and sections of Lincoln Park, the Ironbound, Upper Clinton Hill, Lower Clinton Hill and Dayton.

Learn more about the specific uses that are permitted and prohibited in C-3 zones beginning on page 84.

Learn more about the size and design of buildings permitted in C-3 zones beginning on page 98.



Light Industrial

I-1

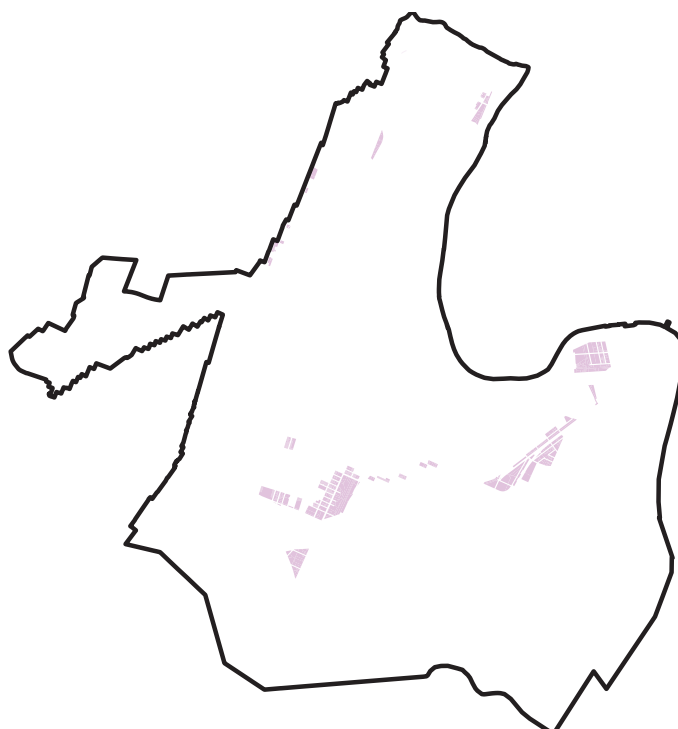


Light Industrial (I-1) zoning allows for industrial development of buildings up to eight stories high or 100 feet and permits a range of uses that are generally more compatible with surrounding neighborhoods than those of heavy industry.

Because it generally allows for uses that are more compatible with surrounding neighborhoods, I-1 zoning is typically applied on the edge of neighborhoods and sometimes as a buffer with more heavy industrial uses. I-1 zoning is applied in such places as along Oraton Street in North Broadway/Woodside; along 3rd Street in Upper Roseville; along N 13th Street in Lower Roseville; along Routes 1 & 9 in the Ironbound; between W Runyon Street and Peddie Street in Lower Clinton Hill; and in the Industrial District along much of the border with Lower Clinton Hill, as well as small pockets of other Newark neighborhoods.

Learn more about the specific uses that are permitted and prohibited in the I-1 zone beginning on page 86.

Learn more about the size and design of buildings permitted in I-1 zones beginning on page 98.



Medium Industrial I-2

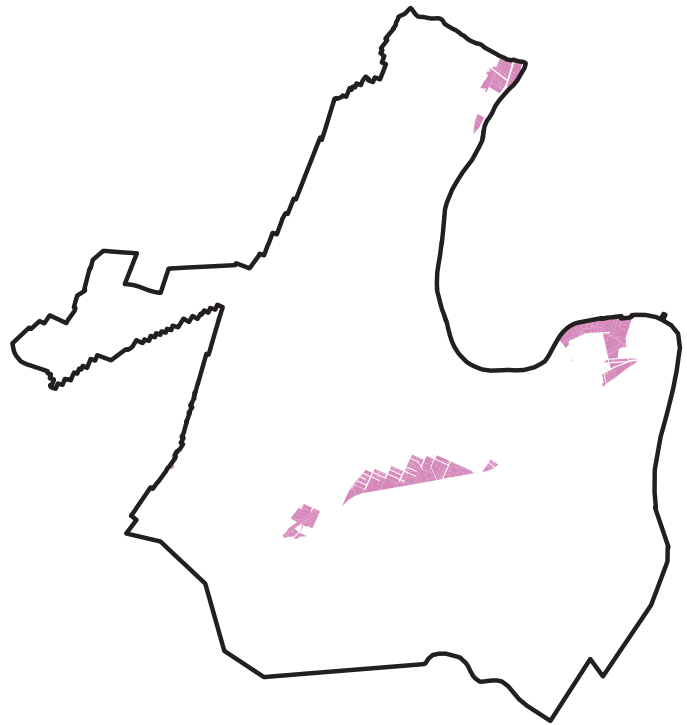


Medium Industrial (I-2) zoning allows for industrial development of buildings up to six stories high or 100 feet and permits a range of uses that are generally less compatible with nearby residential neighborhoods than those of Light Industrial (I-1) zoning.

Because it allows for a range of uses that are less compatible with residential neighborhoods, I-2 zoning is typically applied in industrial districts of residential neighborhoods or adjacent to roads, waterways and lighter industrial areas that can serve as a buffer. I-2 zoning is applied in areas of Newark neighborhoods such as along McCarter Highway and the Passaic River waterfront in North Broadway/Woodside; around S 15th Street in Fairmount; north of Raymond Boulevard in the Ironbound; and in portions of the Newark Industrial District that border Lower Clinton Hill and the Ironbound.

Learn more about the specific uses that are permitted and prohibited in I-2 zones beginning on page 86.

Learn more about the size and design of buildings permitted in I-2 zones beginning on page 98.



Heavy Industrial I-3

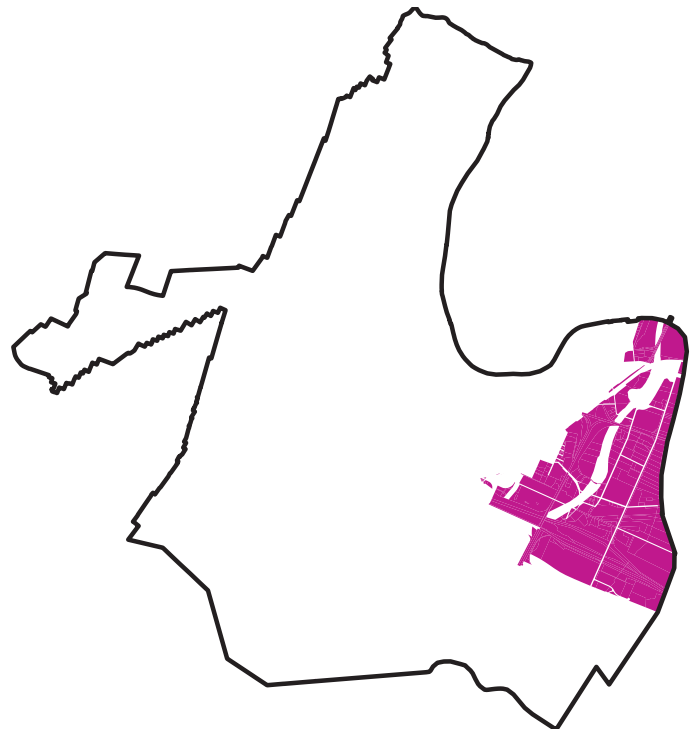


Heavy Industrial (I-3) zoning allows for industrial development of buildings up to ten stories high and permits specific uses that are generally incompatible with residential neighborhoods and thus typically not allowing residential uses.

Because it allows for uses that are incompatible with and even harmful to residents, I-3 zoning is confined to – and comprises much of – the Newark Industrial District and has very low proximity to any residential neighborhood.

Learn more about the specific uses that are permitted and prohibited in I-3 zones beginning on page 86.

Learn more about the size and design of buildings permitted in I-3 zones beginning on page 98.



Mixed-Use 1

Residential & Commercial

MX-1



Mixed Use 1: Residential & Commercial (MX-1) zoning allows for a blend of residential and commercial uses within the same building or district, fostering communities with diverse but integrated uses. These are the kinds of places where residents live over shops that offer everyday services, places to work, shop and play. MX-1 zoning allows for moderately dense residential development, permitting single-, two- and three-family homes and town homes up to three stories high, as well as low-rise, multi-family housing up to four stories high. Commercial development in MX-1 zones allows for ground-floor commercial with commercial or residential above.

MX-1 zoning is applied in areas where there is already a well-integrated mix of residential and commercial uses, such as along Verona Avenue in North Broadway/Woodside; along Broadway in Mount Pleasant; along Morris and Central Avenues in University Heights; along Broad Street in Lincoln Park and throughout large sections of the Ironbound.

Learn more about the [specific uses](#) that are permitted and prohibited in MX-1 zones beginning on page 89.

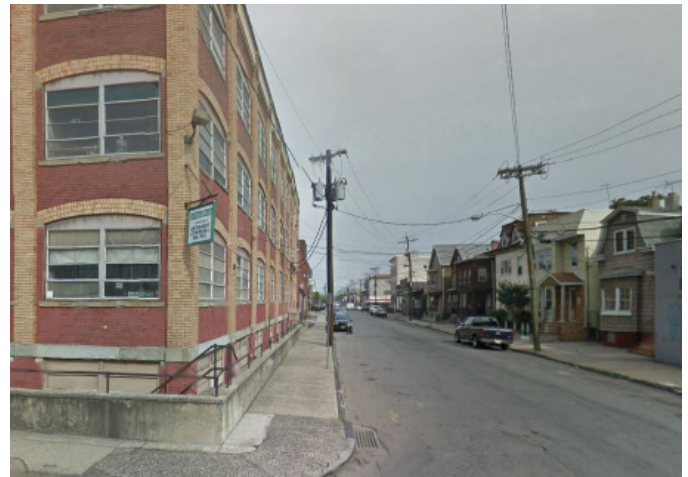
Learn more about the [size and design of buildings](#) permitted in MX-1 zones beginning on page 98.



Mixed-Use 2

Residential, Commercial, Industrial

MX-2

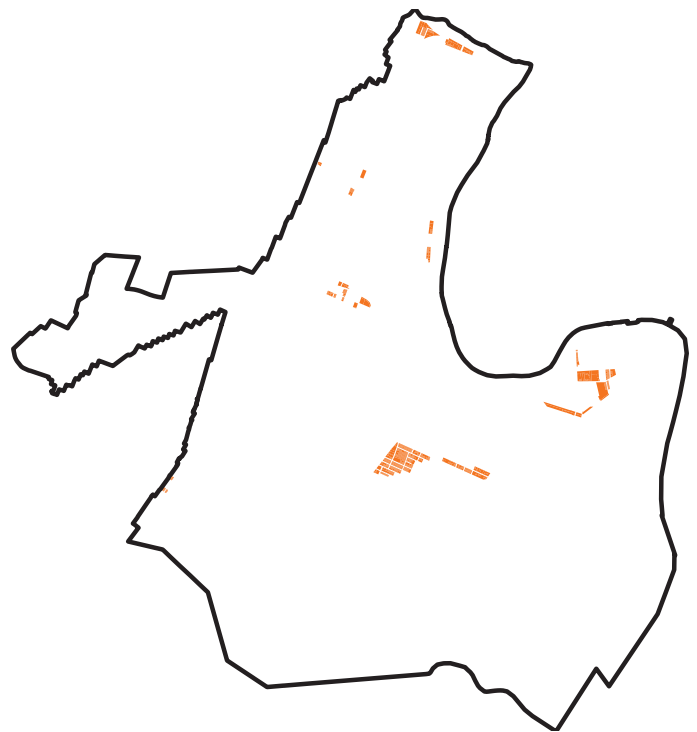


Mixed Use 2: Residential, Commercial, Industrial (MX-2) zoning allows for a blend of residential, commercial, and appropriate industrial uses within the same building or district, fostering flexible, working communities with integrated and innovative uses. These are the kinds of places where homes and businesses mix with industry in creative and productive ways. MX-2 zoning allows for moderately dense residential development, permitting single-, two- and three-family homes and town homes up to three stories high as well as low-rise multi-family housing up to four stories high. Commercial development in MX-2 zones allows for some ground-floor commercial with commercial or residential above. MX-2 also allows for industrial development, encouraging most industrial uses permitted in the I-1 District.

MX-2 zoning is applied in areas where there is already a well-integrated mix of residential, commercial and industrial uses, such as along Verona Avenue in Forest Hill; along Broad Street in Lower Broadway; around Central Avenue in University Heights; in small sections of Upper Clinton Hill; along the many of the edges of the Ironbound; and along Route 27 in Dayton.

Learn more about the specific uses that are permitted and prohibited in MX-2 zones beginning on page 89.

Learn more about the size and design of buildings permitted in MX-2 zones beginning on page 98.



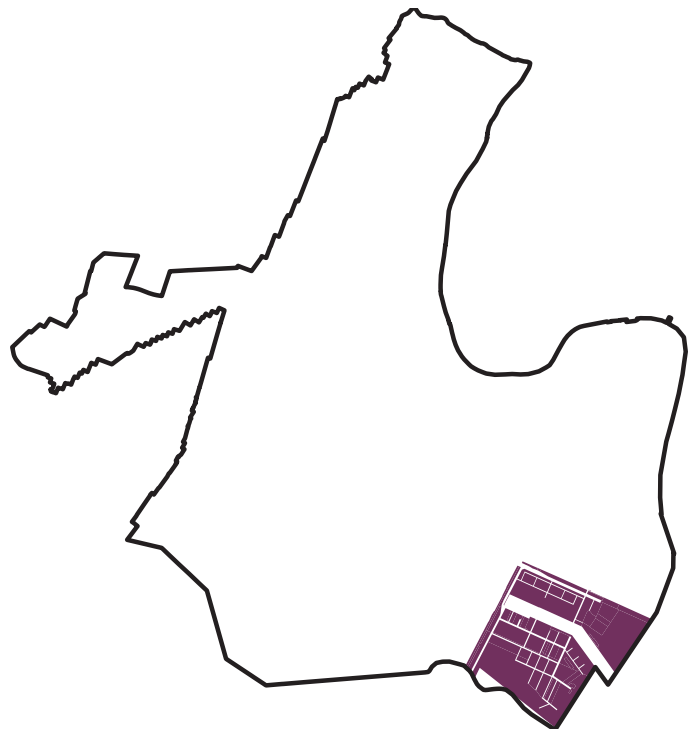
Port PORT



Port (PORT) zoning for port-related activities in and around the Port Newark-Elizabeth Marine Terminal. PORT zoning allows for uses related to the port and services that support it.

Learn more about the specific uses that are permitted and prohibited in the PORT zone beginning on page 86.

Learn more about the size and design of buildings permitted in the PORT zone beginning on page 98.



Airport & Airport Support

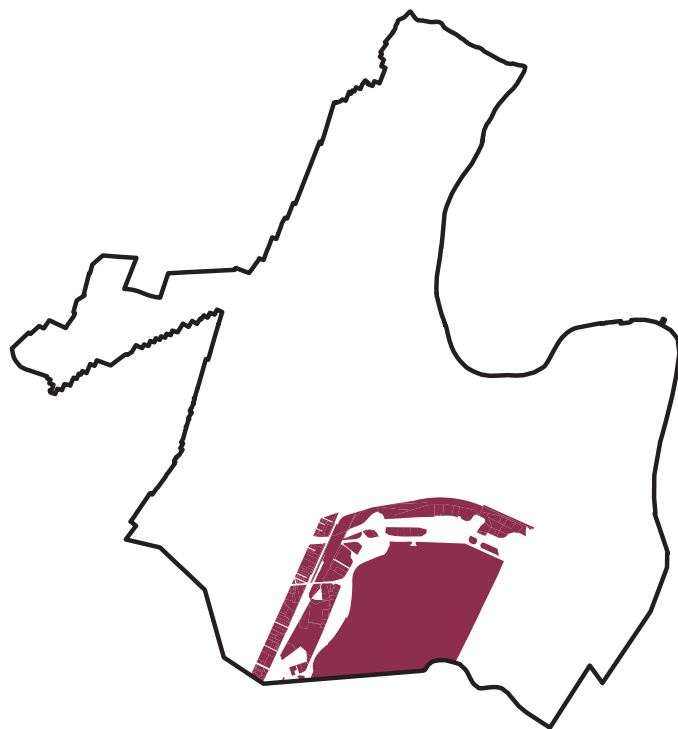
EWR & EWR-S

Airport (EWR) and Airport Support (EWR-S) zoning are for Newark Liberty International Airport and the supporting area around it. EWR/EWR-S zoning allows for industrial development related to the airport and the services that support it. In these areas, industrial buildings can be up to ten stories high and detached commercial buildings up to eight stories high.

Because it allows for specific uses related to Newark Liberty International Airport, EWR/EWR-S zoning is applied only in the Port District and a portion of the Newark Industrial District.

Learn more about the specific uses that are permitted and prohibited in EWR and EWR-S zones beginning on page 86.

Learn more about the size and design of buildings permitted in EWR and EWR-S zones beginning on page 98.



Redevelopment Zones & Special Districts

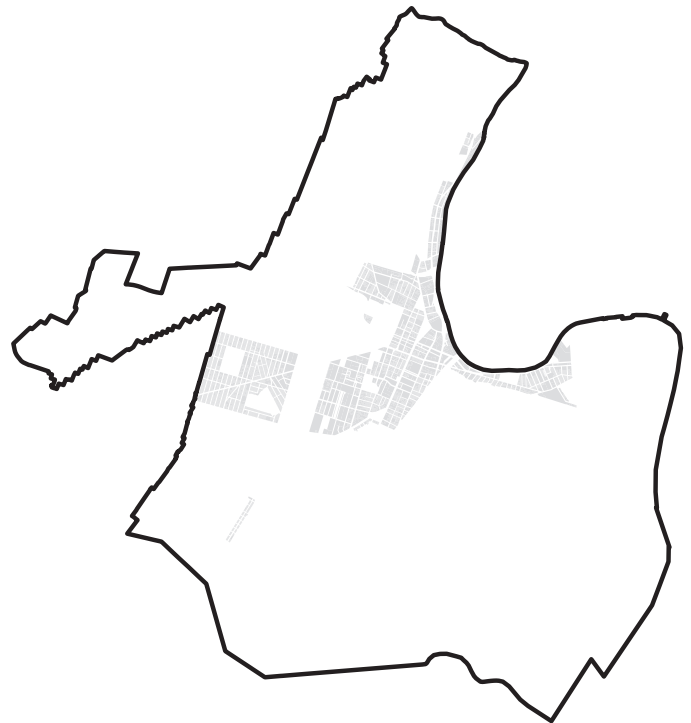
RDV-SD

In Redevelopment Zones & Special Districts (RDV-SD), zoning and land use regulations are set by Redevelopment Plans adopted by the City of Newark under New Jersey Local Housing and Redevelopment Law (P.L. 1992,c.79,s.1.).

On the Newark Zoning Maps, specific redevelopment plans are keyed by numbers in red circles as follows:

- 1 Newark's River: Public Access and Redevelopment Plan
- 2 Kent/Brenner/Springfield Redevelopment Plan
- 3 Broad Street Station District Plan
- 4 Lincoln Park Redevelopment Plan
- 5 Bergen South Redevelopment Plan
- 6 Living Downtown Plan
- 7 Old Third Ward Urban Renewal Plan
- 8 Northern Fairmount Redevelopment Plan
- 9 Downtown Core District Redevelopment Plan

To find these Redevelopment Plans and the zoning & land use regulations they contain, visit the Newark Planning Office website at planning.ci.newark.nj.us or call the Newark Municipal Clerk at (973) 733-3669.



CHAPTER 92

AN ACT concerning the disproportionate environmental and public health impacts of pollution on overburdened communities, and supplementing Title 13 of the Revised Statutes.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

C.13:1D-157 Findings, declarations relative to impact of pollution on overburdened communities.

1. The Legislature finds and declares that all New Jersey residents, regardless of income, race, ethnicity, color, or national origin, have a right to live, work, and recreate in a clean and healthy environment; that, historically, New Jersey's low-income communities and communities of color have been subject to a disproportionately high number of environmental and public health stressors, including pollution from numerous industrial, commercial, and governmental facilities located in those communities; that, as a result, residents in the State's overburdened communities have suffered from increased adverse health effects including, but not limited to, asthma, cancer, elevated blood lead levels, cardiovascular disease, and developmental disorders; that children are especially vulnerable to the adverse health effects caused by exposure to pollution, and that such health effects may severely limit a child's potential for future success; that the adverse effects caused by pollution impede the growth, stability, and long-term well-being of individuals and families living in overburdened communities; that the legacy of siting sources of pollution in overburdened communities continues to pose a threat to the health, well-being, and economic success of the State's most vulnerable residents; and that it is past time for the State to correct this historical injustice.

The Legislature further finds and declares that no community should bear a disproportionate share of the adverse environmental and public health consequences that accompany the State's economic growth; that the State's overburdened communities must have a meaningful opportunity to participate in any decision to allow in such communities certain types of facilities which, by the nature of their activity, have the potential to increase environmental and public health stressors; and that it is in the public interest for the State, where appropriate, to limit the future placement and expansion of such facilities in overburdened communities.

C.13:1D-158 Definitions relative to impact of pollution on overburdened communities.

2. As used in this act:

"Department" means the Department of Environmental Protection.

"Environmental or public health stressors" means sources of environmental pollution, including, but not limited to, concentrated areas of air pollution, mobile sources of air pollution, contaminated sites, transfer stations or other solid waste facilities, recycling facilities, scrap yards, and point-sources of water pollution including, but not limited to, water pollution from facilities or combined sewer overflows; or conditions that may cause potential public health impacts, including, but not limited to, asthma, cancer, elevated blood lead levels, cardiovascular disease, and developmental problems in the overburdened community.

“Facility” means any: (1) major source of air pollution; (2) resource recovery facility or incinerator; (3) sludge processing facility, combustor, or incinerator; (4) sewage treatment plant with a capacity of more than 50 million gallons per day; (5) transfer station or other solid waste facility, or recycling facility intending to receive at least 100 tons of recyclable material per day; (6) scrap metal facility; (7) landfill, including, but not limited to, a landfill that accepts ash, construction or demolition debris, or solid waste; or (8) medical waste incinerator; except that “facility” shall not include a facility as defined in section 3 of P.L.1989, c.34 (C.13:1E-48.3) that accepts regulated medical waste for disposal, including a medical waste incinerator, that is attendant to a hospital or university and intended to process self-generated regulated medical waste.

“Limited English proficiency” means that a household does not have an adult that speaks English “very well” according to the United States Census Bureau.

“Low-income household” means a household that is at or below twice the poverty threshold as that threshold is determined annually by the United States Census Bureau.

“Major source” means a major source of air pollution as defined by the federal “Clean Air Act,” 42 U.S.C. s.7401 et seq., or in rules and regulations adopted by the department pursuant to the “Air Pollution Control Act,” P.L.1954, c.212 (C.26:2C-1 et seq.) or which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant, or other applicable criteria set forth in the federal “Clean Air Act,” 42 U.S.C. s.7401 et seq.

“Overburdened community” means any census block group, as determined in accordance with the most recent United States Census, in which: (1) at least 35 percent of the households qualify as low-income households; (2) at least 40 percent of the residents identify as minority or as members of a State recognized tribal community; or (3) at least 40 percent of the households have limited English proficiency.

“Permit” means any individual permit, registration, or license issued by the department to a facility establishing the regulatory and management requirements for a regulated activity under the following State laws: R.S.12:5-1 et seq.; P.L.1975, c.232 (C.13:1D-29 et al.); the “Solid Waste Management Act,” P.L.1970, c.39 (C.13:1E-1 et seq.); section 17 of P.L.1975, c.326 (C.13:1E-26); the “Comprehensive Regulated Medical Waste Management Act,” P.L.1989, c.34 (C.13:1E-48.1 et al.); P.L.1989, c.151 (C.13:1E-99.21a et al.); the “New Jersey Statewide Mandatory Source Separation and Recycling Act,” P.L.1987, c.102 (C.13:1E-99.11 et al.); the “Pesticide Control Act of 1971,” P.L.1971, c.176 (C.13:1F-1 et seq.); “The Wetlands Act of 1970,” P.L.1970, c.272 (C.13:9A-1 et seq.); the “Freshwater Wetlands Protection Act,” P.L.1987, c.156 (C.13:9B-1 et al.); the “Coastal Area Facility Review Act,” P.L.1973, c.185 (C.13:19-1 et seq.); the “Highlands Water Protection and Planning Act,” P.L.2004, c.120 (C.13:20-1 et seq.), the “Air Pollution Control Act (1954),” P.L.1954, c.212 (C.26:2C-1 et seq.); the “Water Supply Management Act,” P.L.1981, c.262 (C.58:1A-1 et al.); P.L.1947, c.377 (C.58:4A-5 et seq.); the “Water Pollution Control Act,” P.L.1977, c.74 (C.58:10A-1 et seq.); P.L.1986, c.102 (C.58:10A-21 et seq.); or the “Flood Hazard Area Control Act,” P.L.1962, c.19 (C.58:16A-50 et seq.); except that “permit” shall not include any authorization or approval necessary to perform a remediation, as defined pursuant to section 23 of P.L.1993, c.139 (C.58:10B-1), or any authorization or approval

required for a minor modification of a facility's major source permit for activities or improvements that do not increase emissions.

C.13:1D-159 List of overburdened communities on website.

3. No later than 120 days after the effective date of this act, the department shall publish and maintain on its Internet website a list of overburdened communities in the State. The department shall update the list of overburdened communities at least once every two years. The department shall notify a municipality if any part of the municipality has been designated an overburdened community pursuant to this act.

C.13:1D-160 Requirements for permit applicants.

4. a. Beginning immediately upon the adoption of the rules and regulations required pursuant to section 5 of this act, the department shall not consider complete for review any application for a permit for a new facility or for the expansion of an existing facility, or any application for the renewal of an existing facility's major source permit, if the facility is located, or proposed to be located, in whole or in part, in an overburdened community, unless the permit applicant first:

(1) Prepares an environmental justice impact statement that assesses the potential environmental and public health stressors associated with the proposed new or expanded facility, or with the existing major source, as applicable, including any adverse environmental or public health stressors that cannot be avoided if the permit is granted, and the environmental or public health stressors already borne by the overburdened community as a result of existing conditions located in or affecting the overburdened community;

(2) Transmits the environmental justice impact statement required to be prepared pursuant to paragraph (1) of this subsection, at least 60 days in advance of the public hearing required pursuant to paragraph (3) of this subsection, to the department and to the governing body and the clerk of the municipality in which the overburdened community is located. Upon receipt, the department shall publish the environmental justice impact statement on its Internet website; and

(3) Organizes and conducts a public hearing in the overburdened community. The permit applicant shall publish a notice of the public hearing in at least two newspapers circulating within the overburdened community, including one local non-English language newspaper, if applicable, not less than 60 days prior to the public hearing. The permit applicant shall provide a copy of the notice to the department, and the department shall publish the notice on its Internet website and in the monthly bulletin published pursuant to section 6 of P.L.1975, c.232 (C.13:1D-34). The notice of the public hearing shall provide the date, time, and location of the public hearing, a description of the proposed new or expanded facility or existing major source, as applicable, a map indicating the location of the facility, a brief summary of the environmental justice impact statement, information on how an interested person may review a copy of the complete environmental justice impact statement, an address for the submittal of written comments to the permit applicant, and any other information deemed appropriate by the department. At least 60 days prior to the public hearing, the permit applicant shall send a copy of the notice to the department and to the

governing body and the clerk of the municipality in which the overburdened community is located. The applicant shall invite the municipality to participate in the public hearing. At the public hearing, the permit applicant shall provide clear, accurate, and complete information about the proposed new or expanded facility, or existing major source, as applicable, and the potential environmental and public health stressors associated with the facility. The permit applicant shall accept written and oral comments from any interested party, and provided an opportunity for meaningful public participation at the public hearing. The permit applicant shall transcribe the public hearing and, no later than 10 days after the public hearing, submit the transcript along with any written comments received, to the department. Following the public hearing, the department shall consider the testimony presented and any written comments received, and evaluate the issuance of, or conditions to, the permit, as necessary in order to avoid or reduce the adverse environmental or public health stressors affecting the overburdened community.

The department may require the applicant to consolidate the public hearing held pursuant to this paragraph with any other public hearing held or required by the department regarding the permit application, provided the public hearing meets the other requirements of this paragraph. The department shall consider a request by a permit applicant to consolidate required public hearings and, if the request is granted by the department, the consolidation shall not preclude an application from being deemed complete for review pursuant to subsection a. of this section.

b. Notwithstanding the provisions of P.L.1975, c.232 (C.13:1D-29 et seq.) or any other law, or rule or regulation adopted pursuant thereto, to the contrary, the department shall not issue a decision on an application for a permit for a new facility or for the expansion of an existing facility, or on an application for the renewal of an existing facility's major source permit, if such facility is located, or proposed to be located, in whole or in part in an overburdened community until at least 45 days after the public hearing held pursuant to paragraph (3) of subsection a. of this subsection.

c. Notwithstanding the provisions of any other law, or rule or regulation adopted pursuant thereto, to the contrary, the department shall, after review of the environmental justice impact statement prepared pursuant to paragraph (1) of subsection a. of this section and any other relevant information, including testimony and written comments received at the public hearing, deny a permit for a new facility upon a finding that approval of the permit, as proposed, would, together with other environmental or public health stressors affecting the overburdened community, cause or contribute to adverse cumulative environmental or public health stressors in the overburdened community that are higher than those borne by other communities within the State, county, or other geographic unit of analysis as determined by the department pursuant to rule, regulation, or guidance adopted or issued pursuant to section 5 of this act, except that where the department determines that a new facility will serve a compelling public interest in the community where it is to be located, the department may grant a permit that imposes conditions on the construction and operation of the facility to protect public health.

d. Notwithstanding the provisions of any other law, or rule or regulation adopted pursuant thereto, to the contrary, the department may, after review of the environmental

justice impact statement prepared pursuant to paragraph (1) of subsection a. of this section and any other relevant information, including testimony and written comments received at the public hearing, apply conditions to a permit for the expansion of an existing facility, or the renewal of an existing facility's major source permit, concerning the construction and operation of the facility to protect public health, upon a finding that approval of a permit or permit renewal, as proposed, would, together with other environmental or public health stressors affecting the overburdened community, cause or contribute to adverse cumulative environmental or public health stressors in the overburdened community that are higher than those borne by other communities within the State, county, or other geographic unit of analysis as determined by the department pursuant to rule, regulation, or guidance adopted or issued pursuant to section 5 of this act.

e. If a permit applicant is applying for more than one permit for a proposed new or expanded facility, the permit applicant shall only be required to comply with the provisions of this section once, unless the department, in its discretion, determines that more than one public hearing is necessary due to the complexity of the permit applications necessary for the proposed new or expanded facility. Nothing in this section shall be construed to limit the authority of the department to hold or require additional public hearings, as may be required by any other law, rule, or regulation.

f. Nothing in this section shall be construed to limit the right of an applicant to continue facility operations during the process of permit renewal to the extent such right is conveyed by applicable law, rule, or regulation, including the application shield provisions of the rules and regulations adopted pursuant to the "Air Pollution Control Act (1954)," P.L.1954, c.212 (C.26:2C-1 et seq.).

g. In addition to any other fee authorized by law, rule, or regulation, the department shall assess each permit applicant a reasonable fee in order to cover the department's costs associated with the implementation of this act, including costs to provide technical assistance to permit applicants and overburdened communities as needed to comply with this act.

C.13:1D-161 Rules, regulations.

5. a. The department shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) rules and regulations to implement the provisions of this act.

b. The department may issue a technical guidance for compliance with this act, which the department shall publish on its Internet website.

6. This act shall take effect immediately.

Approved September 18, 2020.

APPENDIX C: USING THE ERI TO COMPLETE AN ENVIRONMENTAL REVIEW CHECKLIST

This appendix is intended to provide clarity and support to Covered Applicants and reviewers who are using the ERI as they complete or review an Environmental Review Checklist. The ERI will be referenced differently depending on the application’s zoning use category:

- **For Covered Applicants with an Industrial Use** (*Completing the Full Form*): Use this appendix to answer Question B (pre-existing environmental conditions) and Question F (protection measures for quality of life and public health) of the full form.
- **For Covered Applicants with a Commercial or Light Manufacturing Use** (*Completing the Basic Form*): Use this appendix to answer Part B (Additional Information on Environmental Mitigation Activities) on the basic form, or to provide supplementary information about pre-existing environmental conditions or population characteristics in the project area.

Table 1A: Categories of environmental detriments to consider across Zoning Uses

Each row of Table 1A corresponds to an environmental detriment that a Covered Applicant’s proposed project might impose. Table 1A provides information about which maps and data from the ERI are most relevant to each environmental detriment, as well as corresponding appropriate remediation strategies.

- Step 1:** Refer to **Column iii** (“Does your project...”) to select which rows (environmental detriments) are relevant to the application.
- **Column i** (for basic form applicants) and **Column ii** (for full form applicants) refer to the form question that relates to the environmental detriment in each row. Applicants can use their response to the listed form question to determine if the detriment in that row is relevant to their application.
- Step 2:** For each selected row from Step 1, refer to **Column iv** to identify which maps and/or data to reference in the application.
- Information from relevant maps and data identified in this step should be used to discuss pre-existing environmental conditions in the half mile radius surrounding the proposed project (*Question B on the Full Form*)
- Step 3:** Refer to **Column v** to identify potential remediation strategies that address the relevant detriments identified in Step 1.
- Strategies identified in this step should be used to discuss protection measures for quality of life and public health (*Question F on the Full Form*) or environmental mitigation activities (*Part B of the Basic Form*)

Row#	i. Related basic form question	ii. Related full form question	iii. Does your project...	iv. Relevant maps / data to reference:
(1)	A. I.	C. I.	Generate air pollution on-site	<ul style="list-style-type: none"> • PM_{2.5} • Ozone • TRI • Air toxics cancer risk • Air toxics respiratory hazard index • Asthma
(2)	A. II.	C. II.	Increase impervious surfaces (ex: rooftops, parking lots)	<ul style="list-style-type: none"> • Land surface temperature • FEMA flood hazards • Impervious surfaces • Elevation • Wetlands
(3)	A. III.	C. V.	Store, use, or transport hazardous or toxic materials (as defined by New Jersey Department of Environmental Protections)	<ul style="list-style-type: none"> • Hazardous waste sites • Geology
(4)	A. III.	C. V.	Generate water pollution on-site	<ul style="list-style-type: none"> • Groundwater contamination • NJPDES
(5)	A. IV.	C. VI.	Increase truck traffic	<ul style="list-style-type: none"> • Diesel PM • PM_{2.5} • Ozone • Asthma

(6)	A. V.	C. I. C. IV.	Use non-renewable sources of energy and therefore generate greenhouse gases	<ul style="list-style-type: none"> • Tree Canopy • Infrastructure for the broader region
(7)	A. VI.	C. VIII.	Generate hazardous and/or solid waste & recycling	<ul style="list-style-type: none"> • Hazardous waste • Waste & recycling facilities
(8)	--	A.-B.	Increase passenger vehicular traffic	<ul style="list-style-type: none"> • PM_{2.5} • Traffic proximity and volume • Diesel PM • Asthma • Respiratory hazard index
(9)	--	A.-B.	Reduce tree canopy	<ul style="list-style-type: none"> • Mental distress • Tree canopy cover • Vegetation • Land surface temperature
(10)	--	C. IX.	Emit dust, odors, light, or noise	<ul style="list-style-type: none"> • Respiratory hazard index • Mental distress • Coronary heart disease

Table 1B: Specific Examples of Zoning Principal Uses with Particular Relevance for Environmental Justice

For certain common and relevant zoning types, Table 1B identifies appropriate rows to reference in Table 1A. Covered Applicants with Principal Uses that are listed in Table 1B can use this table to expedite the steps outlined above for Table 1A.

Use Category	Principal Use Example	Important rows to reference in table above for environmental justice concerns & proposed remediation strategies
Automotive Services, Sales, and Repair	Gasoline Station	#1, 2, 3, 5, 8, 10
Food & Drink	Convenience Retail	#2, 7, 8, 10
Manufacturing	Manufacturing, Heavy	#1-10
Outdoor Storage	Outdoor Storage, Chemical	#3, 4, 7
Retail	Dry Cleaning and Laundry Establishment	#1, 2, 3, 4, 6
Utilities	Power Generation Facilities	#1, 3, 6, 7
Warehousing & Distribution	Warehousing, Wholesaling & Distribution	#2, 3, 5, 10
Waste & Recycling	Materials Salvage or Junk Facility	#3, 4, 6, 7, 10

Table 1C: Additional Questions Across Zoning Uses

Answer additional questions uniform across all applications using maps as directed.

Map	Questions to address
Temperature	What is the average temperature in the area of the proposal?
Flood Hazard Zone	Will the proposed activity be in a flood hazard zone?
Slosh	What is the flood height area in the location of the proposed activity?
Land Use	What is the predominant land use in the area of the proposed activity? How will the proposed land use fit in with existing land uses?
Parks and Open Space, Urban Ag, Vegetation, & Tree Canopy Cover	Is there park space, urban agriculture, vegetation, and/or tree canopy cover near the proposed site? Will the proposed project be adding or subtracting park space, urban agriculture, vegetation, and/or tree canopy cover?
Impervious Cover	How much impervious cover is there near proposed site? Will the proposal increase or decrease impervious cover?

Table 2: Population Characteristics

Maps/data related to population information (vulnerable populations, public health) should be referenced in all applications. Table 2 provides clarity for how to consider different population characteristics in applications.

Map	Questions to address
Race and ethnicity	What is the race/ethnicity composition of residents in the census tract of your proposed development?
Poverty	What is the poverty rate near the proposed site?
Child Poverty	What is the amount of child poverty near the proposed site?
Unemployment	What is the unemployment rate in the area of the proposed site?
Income	What income level is near the proposed activity? Would the proposal tend to stratify pollution by income?
Percent Female	What is the percent of female residents in the census tract where the proposed activity will occur?
Children Under 5 & Population Over 65	What is the percentage of children under 5 and population over 65 in the relevant census tract? These folks are more vulnerable to pollution.
Population Density	What is the population density in the area of the proposed activity? The denser the population, the more people that will be exposed to pollution.
Education	What is the percentage of residents with less than a high school education in the relevant census tract?
Language	What is the percentage of residents who face linguistic isolation in the relevant census tract?
Other Vulnerabilities (incarceration, childcare, healthcare)	How many of each type of these facilities are present in the relevant census tract? These are also good indicators for those most vulnerable to the impacts of pollution.
Health (Asthma, Coronary Heart disease, Life Expectancy, High Blood Pressure, Obesity, Diabetes, Mental Distress, Lead Exposure risk, Healthy Food Access)	What are the rates of each of these in the proposed census tracts and the ones immediately surrounding it?